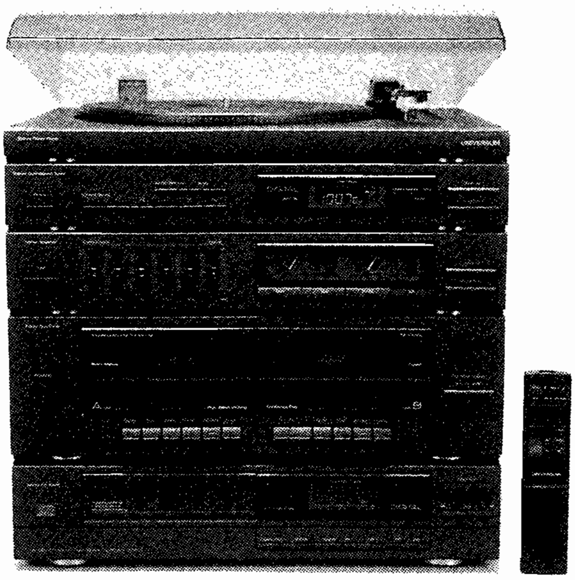
6630

Technische Unterlage

Quelle Technischer Kundendienst

035.4092



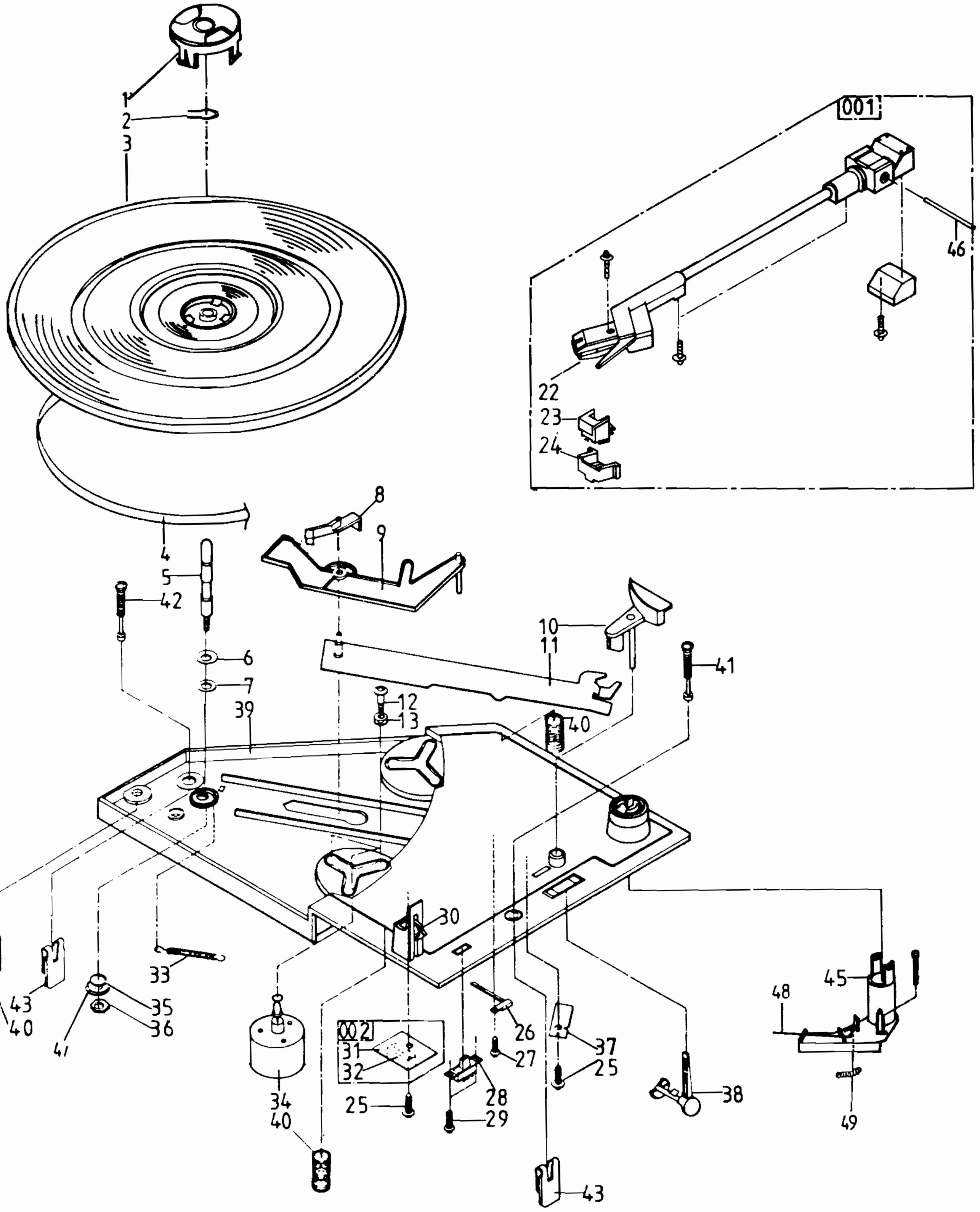
BESTELL-NR.	0354092
GERAETEBEZEICHNUNG	UNIV.-POWER-PACK
WARENGATTUNG	652
AUSFUEHRUNGS-NR.	001
GERAETEBESCHREIBUNG	
PRIVILEG	VTCF 3020
LIEFERANTEN-NR.	118859
PREIS	899.00
KATALOG	924
GARANTIEZEIT	6
KD-SEKTOR	R
HEIM/BRINGE	WERKSTATT
BETREUUNG	EIGEN
KOSTENTRAEGER	EIGEN
REPARATURFAEHIG	JA

6700-451/1184

66 30

Turntable Exploded View

Type No. Q621-05   Part No. C486030366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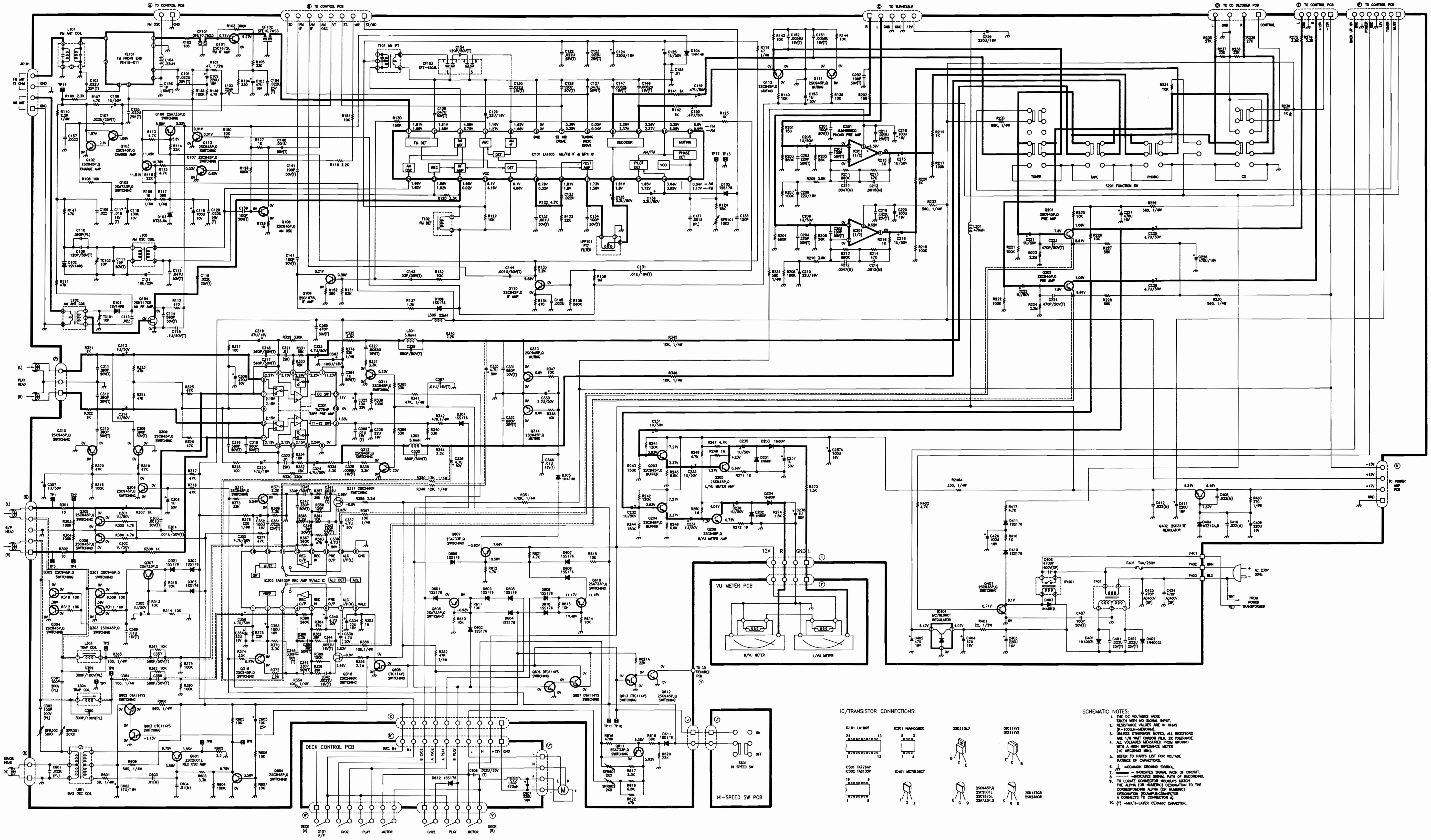
Schematic Diagram-Main

Model No. VTCF-3020


TO CONTROL PCB
TO TURNTABLE
TO CD DECODER PCB
IC101 LA1805 AM/FM IF & MPX IC
IC201 NJM4558DD PHONO PRE AMP
IC301 TA7784P TAPE PRE AMP
IC302 TA8135P REC AMP W/ALC IC
IC401 MC78L06CT REGULATOR
S201 FUNCTION SW
TUNER
TAPE
PHONO
CD
TO POWER AMP PCB
FROM POWER TRANSFORMER
VU METER PCB
R/VU METER
L/VU METER
DECK CONTROL PCB
HI-SPEED SW PCB
S801 HI SPEED SW
TO CD RECORD PCB
PLAY HEAD
R/P HEAD
ERASE HEAD
FM ANT 75 OHM
AM ANT
IC/TRANSISTOR CONNECTIONS:
IC101 LA1805
IC201 NJM4558DD
2SD313E,F
DTC114YS DTA114YS
IC301 TA7784P
IC302 TA8135P
IC401 MC78L06CT
2SC945P,Q 2SC2001L 2SC1675L 2SA733P,Q
2SK117GR 2SK246GR

SCHEMATIC NOTES:

1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/8 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ▬▬ = INDICATES SIGNAL PATH OF CIRCUIT.
8. ----- =INDICATES SIGNAL PATH OF RECORDING.
9. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)
10. (T) =MULTI-LAYER CERAMIC CAPACITOR.

※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

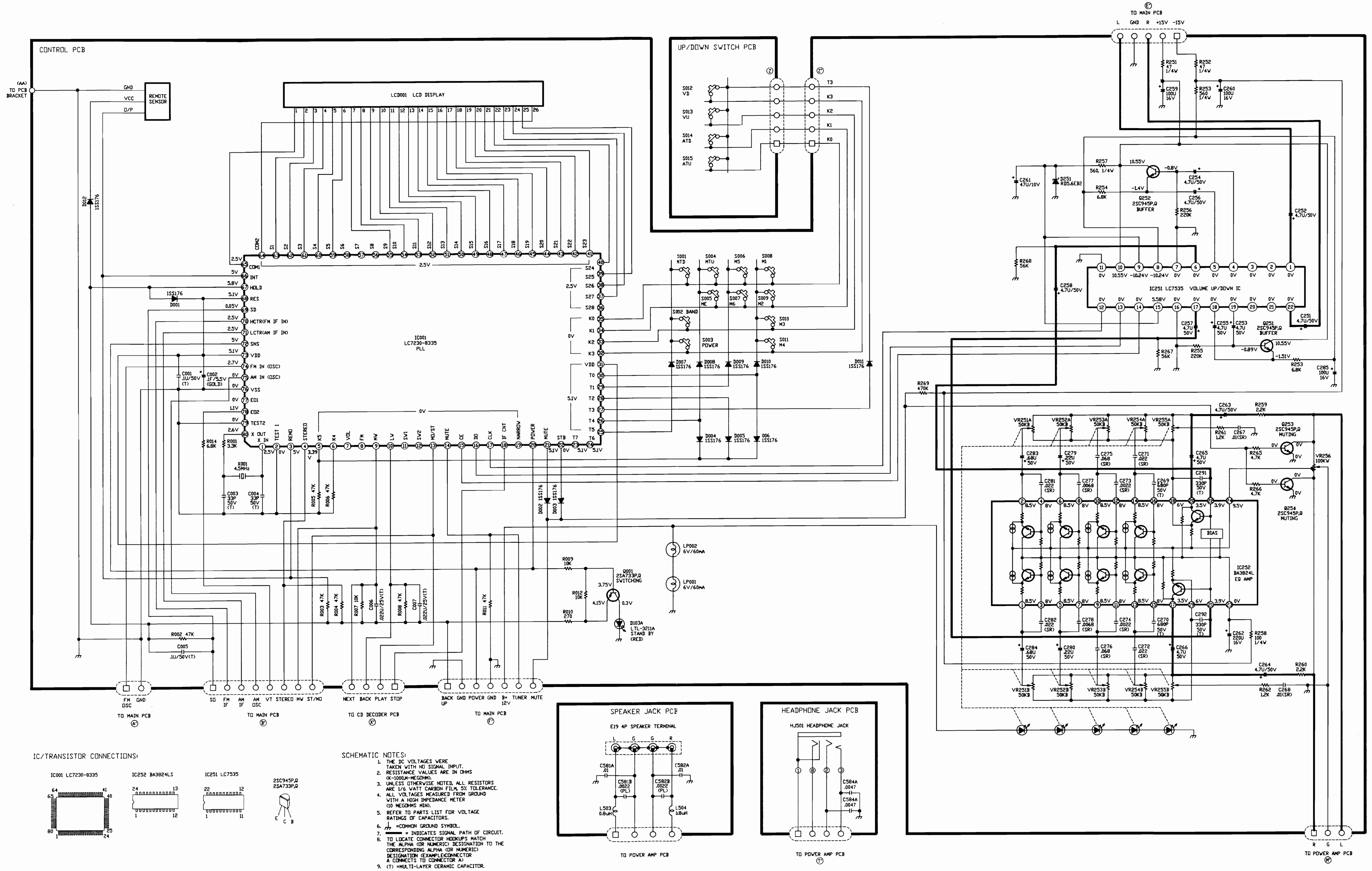
ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
163	D520,521		GLEICHRICHTER B 20 SL	733 235 6
164	D522		GLEICHRICHTER KBU 6D	721 027 1
165	D601-612		DIODE 1 SS 176	988 259 8
166	FE101		FM-TUNER FE 415-G11	781 682 0
167	FR501,502		WIDERSTAND 82.0 OHM 0.50 W SI	781 362 9
168	FR503-508		WIDERSTAND 47,0 OHM 0,25 W SI	965 817 0
169	FR513-515		WIDERSTAND 330.0 OHM 0.50 W SI	781 363 7
170	HJ501,KH		KLINKENBUCHSE 6.3 MM STEREO	781 703 4
171	IC01		IC CXA 1081 M	742 115 9
172	IC02		IC CXA 1082 BQ	781 689 5
173	IC03		IC CXD 1167 Q	781 558 2
174	IC04		IC PST 520 D	721 388 7
175	IC05		IC CXP 1011 Q	781 687 9
176	IC05		IC CXP 1010 AQ	781 688 7
177	IC06		IC UPD 6376 GS	781 685 3
178	IC08		IC NJM 4558 BL	781 686 1
179	IC001		IC LC 7230-8335	781 695 2
180	IC101		IC LA 1805	747 172 5
181	IC201		IC NJM 4558 BD	781 675 4
182	IC251		IC LC 7535	781 694 5
183	IC252		IC BA 3824 LS	781 696 0
184	IC301		IC TA 7784 P	734 070 6
185	IC302		IC TA 8135 P	781 368 6
186	IC401		IC NJM 78 L 06	733 672 0
187	IC501		IC UPC 1237 H	745 514 0
188	JK101,ANT		ANTENNENANSCHLUSSBUCHSE	781 400 7
189	L01-03		DROSSEL	781 691 1
190	L101		FM-ANTENNENSPULE	781 676 2
191	L102		AM-ANTENNENSPULE	781 388 4
192	L103		DROSSEL	734 992 1
193	L105		AM-OSZILLATORSPULE	781 678 8
194	L201		SPULE 470 UH	741 989 8
195	L301,302		DROSSEL	781 677 0
196	L303,304		DROSSEL	781 391 8
197	L305		DROSSEL	734 992 1
198	L501,502		DROSSEL 2,2 UH	949 318 0
199	L503,504		DROSSEL 0.8 UH	781 704 2
200	L601		LOESCHOSZILLATORSPULE	781 679 6
201	L602		SPULE 470 UH	741 989 8
202	LCD01,CD		DISPLAY HLC 9922-012411	781 690 3
203	LCD001,RDF		DISPLAY HLC 9694-012212	781 699 4
204	LP01		LAMPE 5V/150MA	781 692 9
205	LP001		LAMPE 6V/60MA	781 698 6
206	LPF101		LOW PASS FILTER 10FE01	781 387 6
207	M201,202		INSTRUMENT	781 706 7
208	PT1		NETZTRAFO,GROSS	781 707 5
209	Q001		TRANSISTOR 2 SA 733 P	275 032 1
210	Q01		TRANSISTOR 2 SC 945	175 739 2
211	Q02,04,06		TRANSISTOR 2 SA 952	956 654 8
212	Q03,05,07		TRANSISTOR 2 SC 2001K	948 045 0
213	Q08,10,13		TRANSISTOR 2 SA 952	956 654 8
214	Q09,11,22		TRANSISTOR 2 SC 2001K	948 045 0
215	Q12,14,21		TRANSISTOR 2 SA 733 P	275 032 1
216	Q20,30-33		TRANSISTOR 2 SC 945	175 739 2
217	Q23		TRANSISTOR 2 SB 507	929 326 7
218	Q24,25,34		TRANSISTOR 2 SA 733 P	275 032 1
219	Q26		TRANSISTOR 2 SC 2001K	948 045 0
220	Q40-43		TRANSISTOR 2 SC 945	175 739 2
221	Q001		TRANSISTOR 2 SA 733 P	275 032 1
222	Q101		TRANSISTOR 2 SC 1675 L	956 352 9
223	Q102,103		TRANSISTOR 2 SC 945	175 739 2
224	Q104		TRANSISTOR 2 SK 117 GR/BL	987 118 7
225	Q105,106		TRANSISTOR 2 SA 733 P	275 032 1
226	Q107,108		TRANSISTOR 2 SC 945	175 739 2
227	Q109		TRANSISTOR 2 SC 1675 L	956 352 9
228	Q110-306		TRANSISTOR 2 SC 945	175 739 2
229	Q307		TRANSISTOR 2 SA 733 P	275 032 1
230	Q308-316		TRANSISTOR 2 SC 945	175 739 2
231	Q317,318		TRANSISTOR 2 SK 246 GR	724 476 7
232	Q401		TRANSISTOR 2 SC 945	175 739 2
233	Q402		TRANSISTOR 2 SD 313	921 146 7
234	Q501,502		TRANSISTOR 2 SC 3067 F,G	781 370 2
235	Q503-506		TRANSISTOR BD 373 D	951 626 1
			ERSETZT ET-NR. 922 324 9	
236	Q507,508		TRANSISTOR 2 SA 608 KF	781 371 0
237	Q509,510		TRANSISTOR 2 SA 1209 S	781 372 8
238	Q511,512		TRANSISTOR 2 SC 2911 S	781 373 6
239	Q513,514		TRANSISTOR 2 SD 947	781 374 4
240	Q515,516		TRANSISTOR 2 SC 3117 S,R	781 375 1
241	Q517,518		TRANSISTOR 2 SA 1249 S,R	781 376 9
242	Q519,520		TRANSISTOR 2 SC 3907	780 303 4
243	Q521,522		TRANSISTOR 2 SA 1516	780 304 2
244	Q523,524		TRANSISTOR 2 SC 1841 E/F	988 714 2
245	Q525		TRANSISTOR 2 SA 988 F,E	781 379 3
246	Q526		TRANSISTOR 2 SA 733 P	275 032 1
247	Q527		TRANSISTOR 2 SD 313	921 146 7
248	Q601		TRANSISTOR 2 SC 2001K	948 045 0
249	Q602		TRANSISTOR DTA 114 YS	723 978 3
250	Q603		TRANSISTOR DTC 114 YS	749 863 7
251	Q604,612		TRANSISTOR 2 SC 945	175 739 2

ZEILE	POSITION	SYM	BEZEICHNUNG	ET-NUMMER
252	Q605,606		TRANSISTOR DTC 114 YS	749 863 7
253	Q607		TRANSISTOR DTA 114 YS	723 978 3
254	Q608-611		TRANSISTOR 2 SA 733 P	275 032 1
255	Q613		TRANSISTOR DTC 114 YS	749 863 7
256	R521-524		WIDERSTAND 0.22 OHM 5 WATT	781 361 1
257	RY401,NETZ		RELAIS OMIT-SS-112DM	781 405 6
258	RY501,LAUT		RELAIS OMIT-SS-212D	781 406 4
259	501-10		TAKTSCHALTER	781 693 7
260	S001-015		TAKTSCHALTER	781 693 7
261	S101		MIKROSCHALTER	781 709 1
262	S201		TASTENSATZ 4-FACH	781 681 2
263	S601		DRUCKSCHALTER	781 397 5
264	T101		AM-ZF-FILTER	781 393 4
265	T102		FM-ZF-FILTER	781 394 2
266	T401		NETZTRAFO,STANDBY	781 395 9
267	VR251-255		SCHIEBEREGLER 2X50KB	781 701 8
268	VR256,BAL		SCHIEBEREGLER 100KW	781 700 0
269	X001		QUARZ 4.5000 MHZ	733 845 2
270	XTL01		QUARZ,8.4672 MHZ	733 095 4
271				
272			PLATTENSPIELER :	
273				
274			MAGNET SYSTEM DMS 239	987 948 7
275			NADELTRAEGER DIAMANT DN 239	987 949 5
276				
277			PLATTENSPIELER	781 673 9
278	001		TONARM	782 139 0
279	1		PUCK,REDUZIERSTUECK	781 638 2
280	2		SPRENGRING	782 131 7
281	3		PLATTENTELLER	782 132 5
282	4		RIEMEN	782 133 3
283	5		TELLERACHSE	782 134 1
284	8		SCHALTKULISSE	782 135 8
285	9		SCHALTHEBEL	782 136 6
286	10		LIFTARM	782 137 4
287	11		SCHALTSCHIEBER	782 138 2
288	26		BLATTFEDERSCHALTER	782 140 8
289	28		SCHIEBESCHALTER	782 141 6
290	30		CLIP FUER TONARMSTUETZE	782 142 4
291	33		FEDER	782 143 2
292	34		MOTOR,MMI-6T2RWK,TMF 2R80	742 860 0
293	34,ODER		MOTOR, SHR-2R	746 408 4
294	38		LIFTHEBEL	782 144 0
295	45		TONARMHEBEL	782 145 7
296	48		SCHALTSTANGE	782 146 5
297	49		FEDER	782 147 3

ENDE

Schematic Diagram- Control

Model No. VTCF-3020



CONTROL PCB
UP/DOWN SWITCH PCB
LCD001 LCD DISPLAY
IC001 LC7230-8335 PLL
REMOTE SENSOR
IC251 LC7535 VOLUME UP/DOWN IC
IC252 BA3824L EQ AMP
Q251 2SC945P,Q BUFFER
Q252 2SC945P,Q BUFFER
Q253 2SC945P,Q MUTING
Q254 2SC945P,Q MUTING
Q001 2SA733P,Q SWITCHING
D103A LTL-3211A STAND BY (RED)
LP001 6V/60mA
LP002 6V/60mA
X001 4.5MHz
S001 NTD
S002 BAND
S003 POWER
S012 VD
S013 VU
S014 ATD
S015 ATU
BIAS
SPEAKER JACK PCB
E19 4P SPEAKER TERMINAL
HEADPHONE JACK PCB
HJ501 HEADPHONE JACK
TO PCB BRACKET (AA)
TO MAIN PCB Ⓐ
TO MAIN PCB Ⓑ
TO CD DECODER PCB Ⓧ'
TO MAIN PCB Ⓕ
TO MAIN PCB Ⓔ'
TO POWER AMP PCB
TO POWER AMP PCB Ⓣ'
TO POWER AMP PCB Ⓗ'
NEXT BACK PLAY STOP
BACK UP GND POWER GND B+ 12V TUNER MUTE
SD FM IF AM IF AM OSC VT STEREO MW ST/MO
FM OSC GND
L GND R +15V -15V
IC/TRANSISTOR CONNECTIONS:
IC001 LC7230-8335
IC252 BA3824LS
IC251 LC7535
2SC945P,Q 2SA733P,Q
E C B

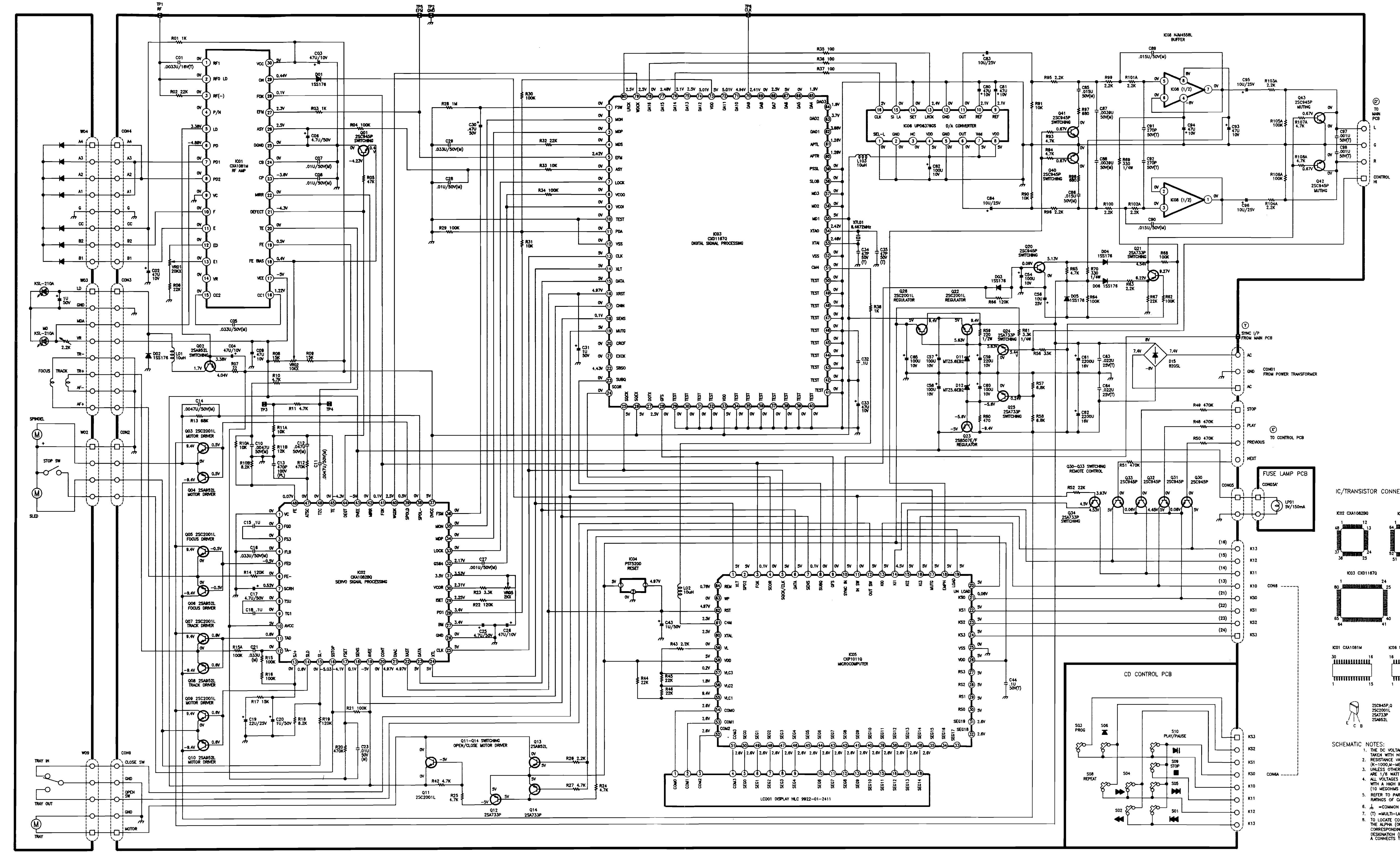
SCHEMATIC NOTES:

1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/6 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ▬ = INDICATES SIGNAL PATH OF CIRCUIT.
8. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)
9. (T) =MULTI-LAYER CERAMIC CAPACITOR.

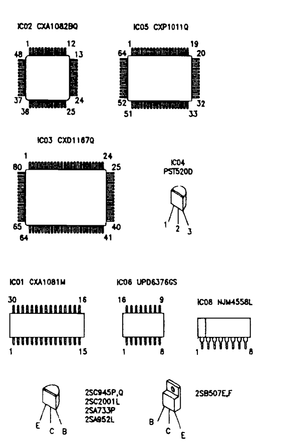
※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBCD UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

Schematic Diagram-CD

Model No. VTCF-3020


IC01 CXA1081M RF AMP
IC02 CXA1082BQ SERVO SIGNAL PROCESSING
IC03 CXD1167Q DIGITAL SIGNAL PROCESSING
IC04 PST5200 RESET
IC05 CXP1011Q MICROCOMPUTER
IC06 UPD6376GS D/A CONVERTER
IC08 NJM4558L BUFFER
LCD01 DISPLAY MLC 9922-01-2411
CD CONTROL PCB
FUSE LAMP PCB
SPINDEL
SLED
STOP SW
TRAY IN
TRAY OUT
TRAY
KSL-210A
FOCUS
TRACK
Q11–Q14 SWITCHING OPEN/CLOSE MOTOR DRIVER
Q30–Q33 SWITCHING REMOTE CONTROL
TO MAIN PCB
TO CONTROL PCB
CON01 FROM POWER TRANSFORMER
SYNC I/P FROM MAIN PCB
S03 PROG
S08 REPEAT
S10 PLAY/PAUSE
S09 STOP

IC/TRANSISTOR CONNECTIONS:


IC02 CXA1082BQ
IC05 CXP1011Q
IC03 CXD1167Q
IC04 PST5200
IC01 CXA1081M
IC06 UPD6376GS
IC08 NJM4558L
2SC945P,Q
2SC2001L
2SA733P
2SA952L
2SB507E,F
E
C
B

SCHEMATIC NOTES:

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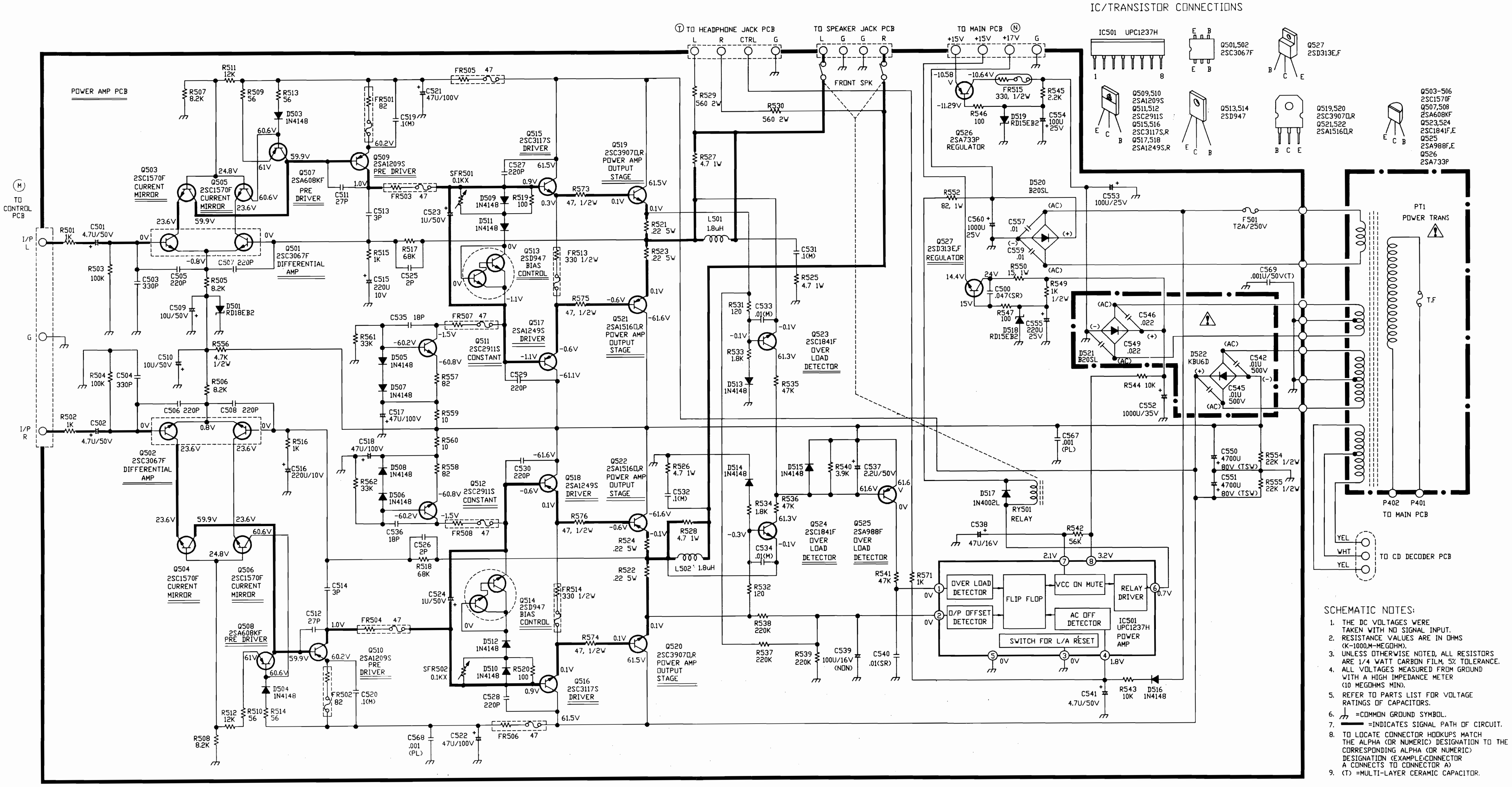
Schematic Diagram- Power

Model No. VTCF-3020


IC/TRANSISTOR CONNECTIONS
IC501 UPC1237H
Q501,502 2SC3067F
Q527 2SD313E,F
Q509,510 2SA1209S
Q511,512 2SC2911S
Q515,516 2SC3117S,R
Q517,518 2SA1249S,R
Q513,514 2SD947
Q519,520 2SC3907Ω,R
Q521,522 2SA1516Ω,R
Q503-506 2SC1570F
Q507,508 2SA608KF
Q523,524 2SC1841F,E
Q525 2SA988F,E
Q526 2SA733P
E C B
POWER AMP PCB
TO CONTROL PCB
I/P L
G
I/P R
Ⓣ TO HEADPHONE JACK PCB
L R CTRL G
TO SPEAKER JACK PCB
L G G R
FRONT SPK
TO MAIN PCB Ⓝ
+15V +15V +17V G
Q501 2SC3067F DIFFERENTIAL AMP
Q502 2SC3067F DIFFERENTIAL AMP
Q503 2SC1570F CURRENT MIRROR
Q505 2SC1570F CURRENT MIRROR
Q504 2SC1570F CURRENT MIRROR
Q506 2SC1570F CURRENT MIRROR
Q507 2SA608KF PRE DRIVER
Q508 2SA608KF PRE DRIVER
Q509 2SA1209S PRE DRIVER
Q510 2SA1209S PRE DRIVER
Q511 2SC2911S CONSTANT
Q512 2SC2911S CONSTANT
Q513 2SD947 BIAS CONTROL
Q514 2SD947 BIAS CONTROL
Q515 2SC3117S DRIVER
Q516 2SC3117S DRIVER
Q517 2SA1249S DRIVER
Q518 2SA1249S DRIVER
Q519 2SC3907Ω,R POWER AMP OUTPUT STAGE
Q520 2SC3907Ω,R POWER AMP OUTPUT STAGE
Q521 2SA1516Ω,R POWER AMP OUTPUT STAGE
Q522 2SA1516Ω,R POWER AMP OUTPUT STAGE
Q523 2SC1841F OVER LOAD DETECTOR
Q524 2SC1841F OVER LOAD DETECTOR
Q525 2SA988F OVER LOAD DETECTOR
Q526 2SA733P REGULATOR
Q527 2SD313E,F REGULATOR
IC501 UPC1237H POWER AMP
OVER LOAD DETECTOR
O/P OFFSET DETECTOR
FLIP FLOP
VCC ON MUTE
RELAY DRIVER
AC OFF DETECTOR
SWITCH FOR L/A RESET
RY501 RELAY
D517 1N4002L
D520 B20SL
D521 B20SL
D522 KBU6D
F501 T2A/250V
PT1 POWER TRANS
T.F
P402 P401
TO MAIN PCB
YEL WHT YEL
TO CD DECODER PCB
R501 1K
R502 1K
C501 4.7U/50V
C502 4.7U/50V
R503 100K
R504 100K
C503 330P
C504 330P
C505 220P
C506 220P
C507 220P
C508 220P
R505 8.2K
R506 8.2K
R507 8.2K
R508 8.2K
R509 56
R510 56
R511 12K
R512 12K
R513 56
R514 56
R515 1K
R516 1K
R517 68K
R518 68K
R519 100
R520 100
R521 .22 5W
R522 .22 5W
R523 .22 5W
R524 .22 5W
R525 4.7 1W
R526 4.7 1W
R527 4.7 1W
R528 4.7 1W
R529 560 2W
R530 560 2W
R531 120
R532 120
R533 1.8K
R534 1.8K
R535 47K
R536 47K
R537 220K
R538 220K
R539 220K
R540 3.9K
R541 47K
R542 56K
R543 10K
R544 10K
R545 2.2K
R546 100
R547 100
R549 1K 1/2W
R550 15 1W
R552 82, 1W
R554 22K 1/2W
R555 22K 1/2W
R556 4.7K 1/2W
R557 82
R558 82
R559 10
R560 10
R561 33K
R562 33K
R571 1K
R573 47, 1/2W
R574 47, 1/2W
R575 47, 1/2W
R576 47, 1/2W
FR501 82
FR502 82
FR503 47
FR504 47
FR505 47
FR506 47
FR507 47
FR508 47
FR513 330 1/2W
FR514 330 1/2W
FR515 330, 1/2W
SFR501 0.1KX
SFR502 0.1KX
L501 1.8uH
L502 1.8uH
C509 10U/50V
C510 10U/50V
C511 27P
C512 27P
C513 3P
C514 3P
C515 220U 10V
C516 220U/10V
C517 47U/100V
C518 47U/100V
C519 .1(M)
C520 .1(M)
C521 47U/100V
C522 47U/100V
C523 1U/50V
C524 1U/50V
C525 2P
C526 2P
C527 220P
C528 220P
C529 220P
C530 220P
C531 .1(M)
C532 .1(M)
C533 .01(M)
C534 .01(M)
C535 18P
C536 18P
C537 2.2U/50V
C538 47U/16V
C539 100U/16V (NON)
C540 .01(SR)
C541 4.7U/50V
C542 .01U 500V
C545 .01U 500V
C546 .022
C549 .022
C550 4700U 80V (TSW)
C551 4700U 80V (TSW)
C552 1000U/35V
C553 100U/25V
C554 100U 25V
C555 220U 25V
C557 .01
C559 .01
C560 1000U 25V
C567 .001 (PL)
C568 .001 (PL)
C569 .001U/50V(T)
C500 .047(SR)
D501 RD18EB2
D503 1N4148
D504 1N4148
D505 1N4148
D506 1N4148
D507 1N4148
D508 1N4148
D509 1N4148
D510 1N4148
D511 1N4148
D512 1N4148
D513 1N4148
D514 1N4148
D515 1N4148
D516 1N4148
D518 RD15EB2
D519 RD15EB2
(AC) (+) (-)
0V -0.8V 0.8V 23.6V 24.8V 59.9V 60.6V 61V 60.2V 1.0V 0.9V 0.3V 61.5V 0.1V -0.6V -1.1V -1.5V -60.2V -60.8V -61.6V -61.1V 61.3V -0.1V -0.3V 61.6V 2.1V 3.2V 0.7V 1.8V 14.4V 24V 15V -10.58V -10.64V -11.29V

SCHEMATIC NOTES:

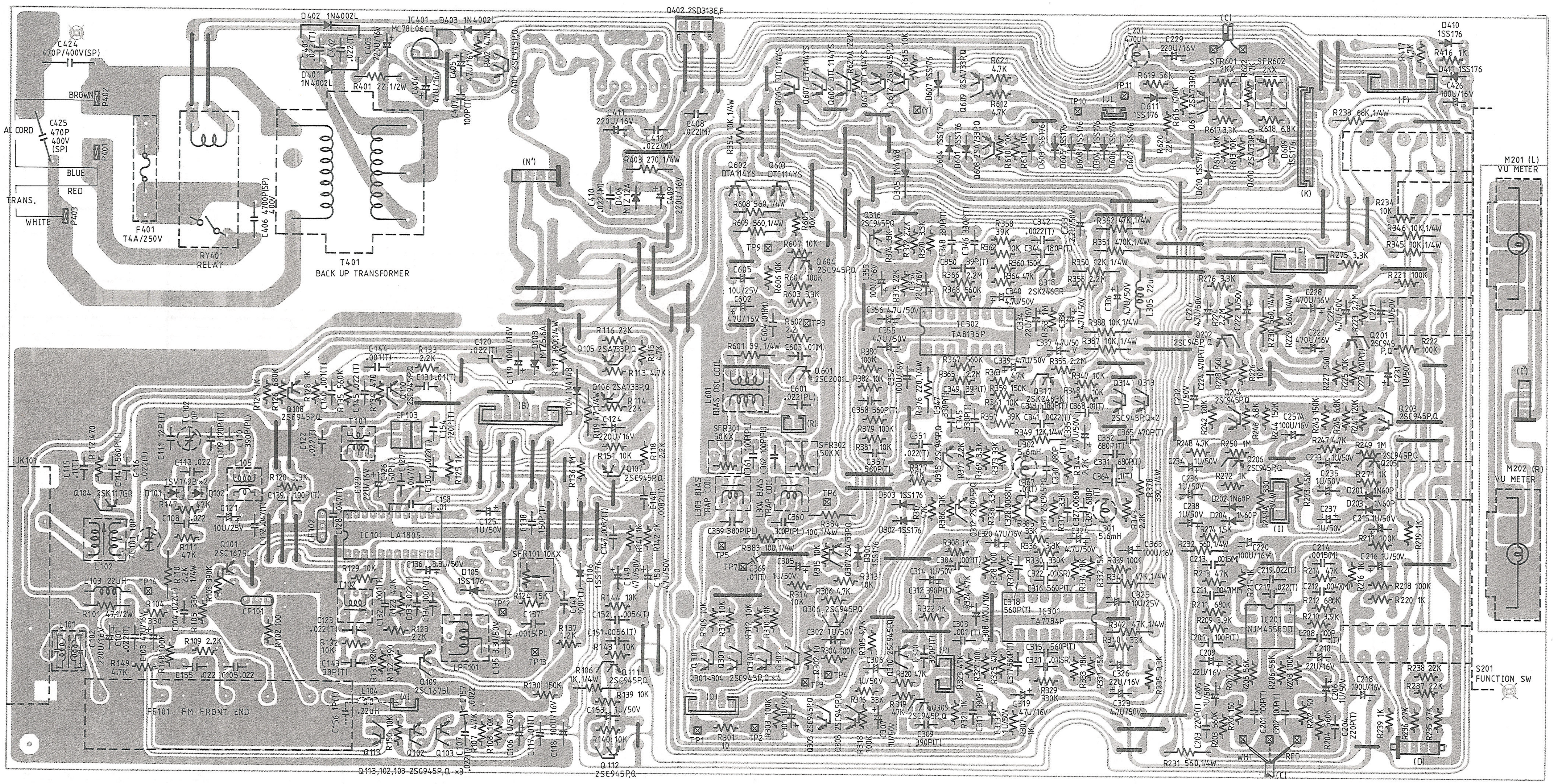
1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/4 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ▬ =INDICATES SIGNAL PATH OF CIRCUIT.
8. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)
9. (T) =MULTI-LAYER CERAMIC CAPACITOR.

※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBCD UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

P C Board-Solder Side

Model No. VTCF-3020

(M48) Main PCB

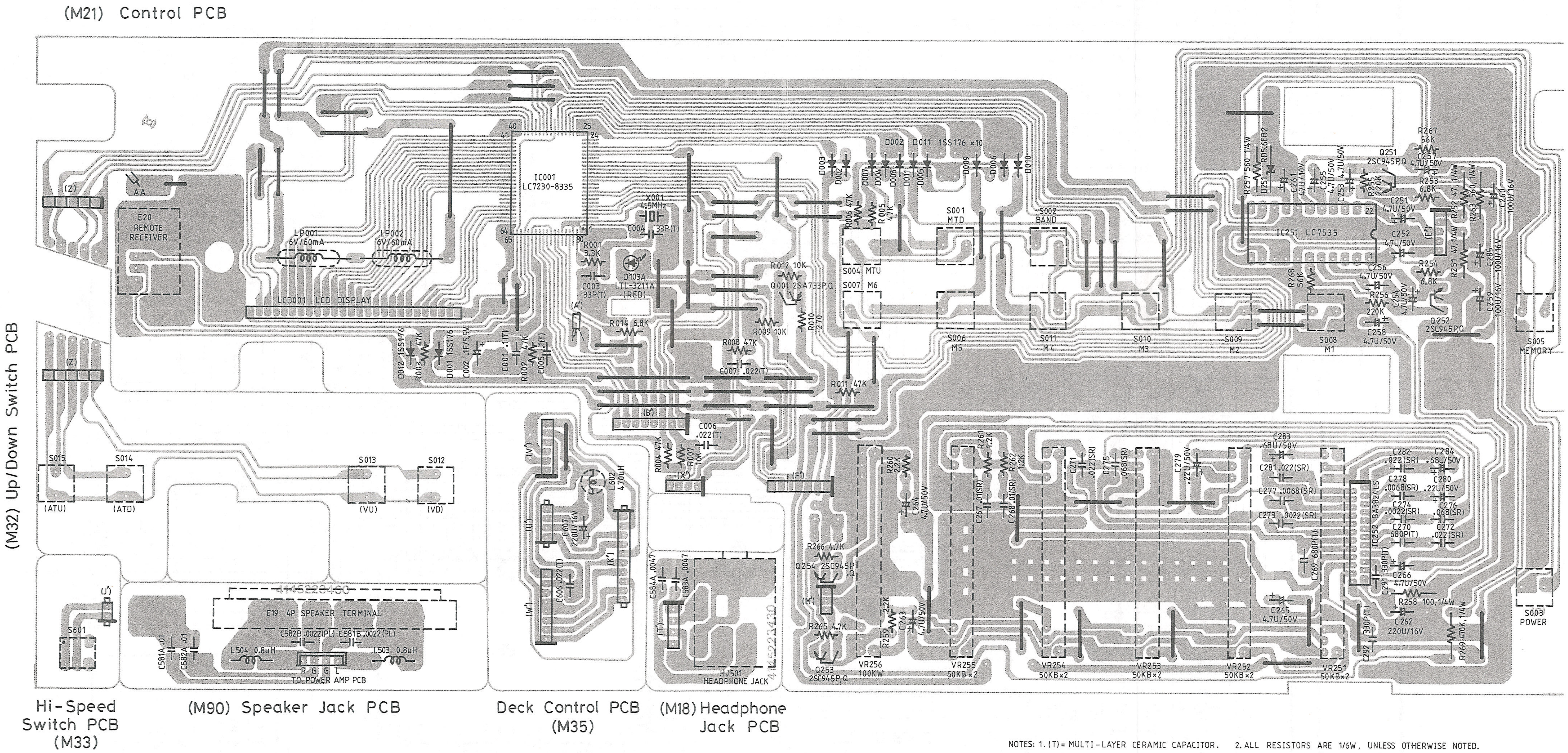

AC CORD
TRANS.
BROWN
BLUE
RED
WHITE
P401
P402
P403
C424 470P/400V(SP)
C425 470P 400V (SP)
F401 T4A/250V
RY401 RELAY
C406 4700P(SP) 400V
T401 BACK UP TRANSFORMER
D402 1N4002L
D401 1N4002L
IC401 MC78L06CT
D403 1N4002L
R401 22 1/2W
Q401 2SC945PQ
Q402 2SD313E,F
C411 220U/16V
C408 .022(M)
R403 270 1/4W
D404 MTZ7.5A
C409 220U/16V
(N')
JK101
Q104 2SK117GR
D101 1SV149B×2
D102
L102
L103 22uH
L101
FE101 FM FRONT END
IC101 LA1805
CF101
CF103
SFR101 10KX
LPF101
Q101 2SC1675L
Q109 2SC1675L
Q108 2SC945PQ
Q105 2SA733P,Q
Q106 2SA733P,Q
Q107 2SC945PQ
Q111 2SC945PQ
Q112 2SC945PQ
Q113,102,103 2SC945P,Q ×3
L104 .22uH
D103 MTZ5.6A
D104 1N4148
D105 1SS176
D106 1SS176
TP12
TP13
TP14
L601 BIAS OSC COIL
Q601 2SC2001L
Q602 DTA114YS
Q603 DTC114YS
Q604 2SC945PQ
SFR301 50KX
SFR302 50KX
L303 BIAS TRAP COIL
L304 BIAS TRAP COIL
IC302 TA8135P
IC301 TA7784P
Q301-304 2SC945P,Q ×4
Q313
Q314
Q316 2SC945PQ
Q317 2SK246GR
Q318 2SK246GR
L301 5.6mH
L305 22uH
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
D301
D302 1SS176
D303 1SS176
D305 1N4148
L201 470uH
SFR601 2KX
SFR602 2KX
D410 1SS176
D411 1SS176
Q201 2SC945 P,Q
Q202 2SC945P,Q
Q203 2SC945P,Q
Q204 2SC945PQ
Q205 2SC945PQ
Q206 2SC945PQ
IC201 NJM4558DD
D201 1N60P
D202 1N60P
D203 1N60P
D204 1N60P
(A)
(B)
(C)
(D)
(E)
(F)
(I)
(J)
(K)
(Q)
(R)
(Y)
WHT
RED
M201 (L) VU METER
M202 (R) VU METER
S201 FUNCTION SW

(M29) VU Meter PCB

NOTES: 1. (T)=MULTI-LAYER CERAMIC CAPACITOR. 2. ALL RESISTORS ARE 1/6W, UNLESS OTHERWISE NOTED.

P C Board-Solder Side

Model No. VTCF-3020

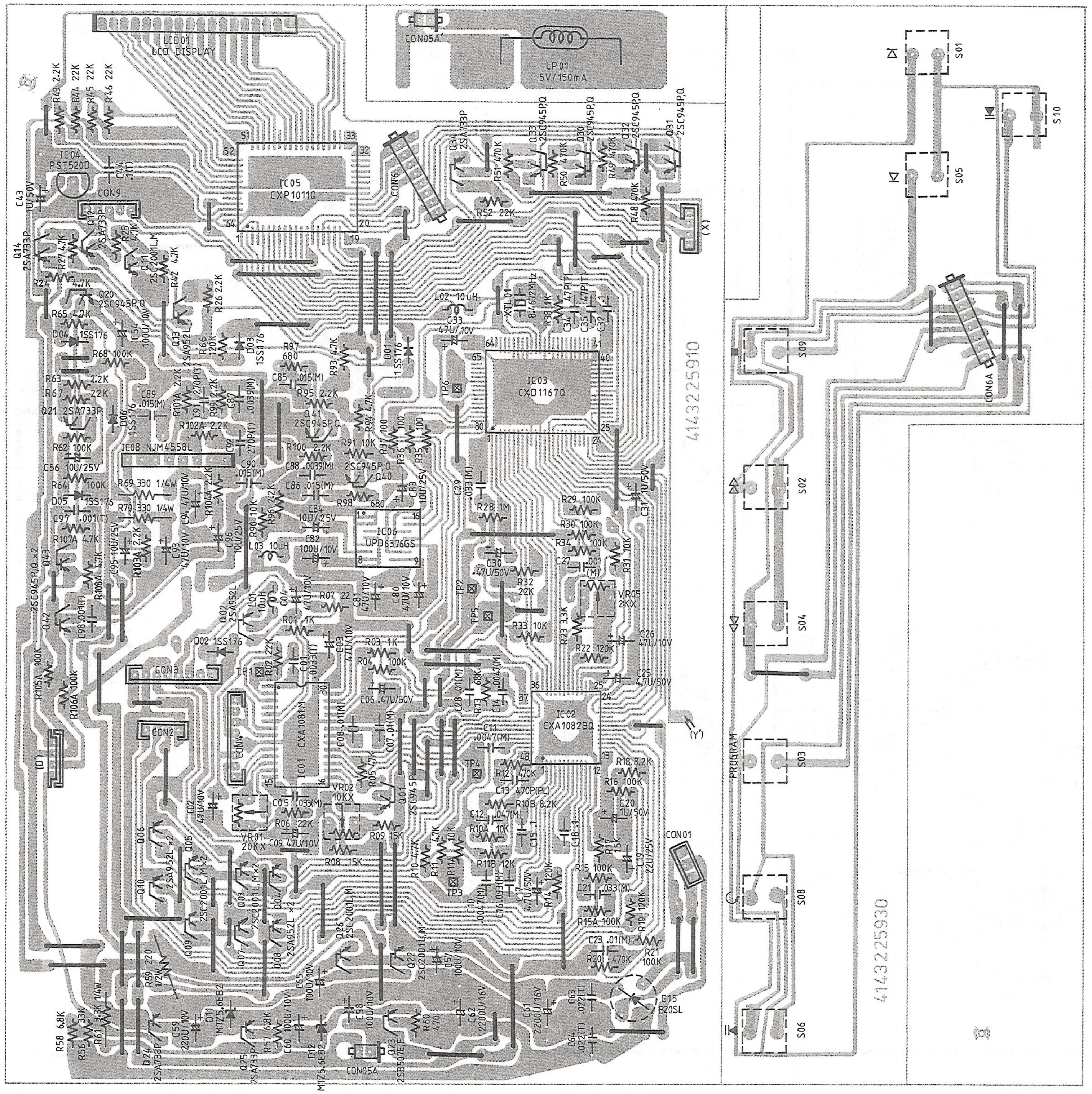

(M21) Control PCB
(M32) Up/Down Switch PCB
Hi-Speed Switch PCB (M33)
(M90) Speaker Jack PCB
Deck Control PCB (M35)
(M18) Headphone Jack PCB
IC001 LC7230-8335
E20 REMOTE RECEIVER
LP001 6V/60mA
LP002 6V/60mA
LCD001 LCD DISPLAY
X001 4.5MHz
C004 33P(T)
R001 3.3K
C003 33P(T)
D103A LTL-3211A (RED)
R014 6.8K
R012 10K
Q001 2SA733P,Q
R009 10K
R010 270
R008 47K
C007 .022(T)
R011 47K
C006 .022(T)
R004 4.7K
R007 10K
D002 D011 1SS176 ×10
S001 MTD
S002 BAND
S004 MTU
S007 M6
S006 M5
S011 M4
S010 M3
S009 M2
S008 M1
S005 MEMORY
S003 POWER
IC251 LC7535
Q251 2SC945P,Q
Q252 2SC945P,Q
R267 56K
R253 6.8K
R254 6.8K
R256 220K
R268 56K
C251 4.7U/50V
C252 4.7U/50V
C256 4.7U/50V
C258 4.7U/50V
C259 100U/16V
C260 100U/16V
IC252 BA3824LS
VR251 50KB×2
VR252 50KB×2
VR253 50KB×2
VR254 50KB×2
VR255 50KB×2
VR256 100KW
Q253 2SC945P,Q
Q254 2SC945P,Q
R265 4.7K
R266 4.7K
R258 100 1/4W
R269 470K 1/4W
C262 220U/16V
C265 4.7U/50V
C266 470U/50V
S015 (ATU)
S014 (ATD)
S013 (VU)
S012 (VD)
S601
E19 4P SPEAKER TERMINAL
C582B .0022(PL)
C581B .0022(PL)
L504 0.8uH
L503 0.8uH
R G G L
TO POWER AMP PCB
C581A .01
C582A .01
C602 2200U/16V
C606 .022(T)
L602 470uH
C584A .0047
C583A .0047
HJ501 HEADPHONE JACK

NOTES: 1. (T) = MULTI-LAYER CERAMIC CAPACITOR. 2. ALL RESISTORS ARE 1/6W, UNLESS OTHERWISE NOTED.

P C Board-Solder Side

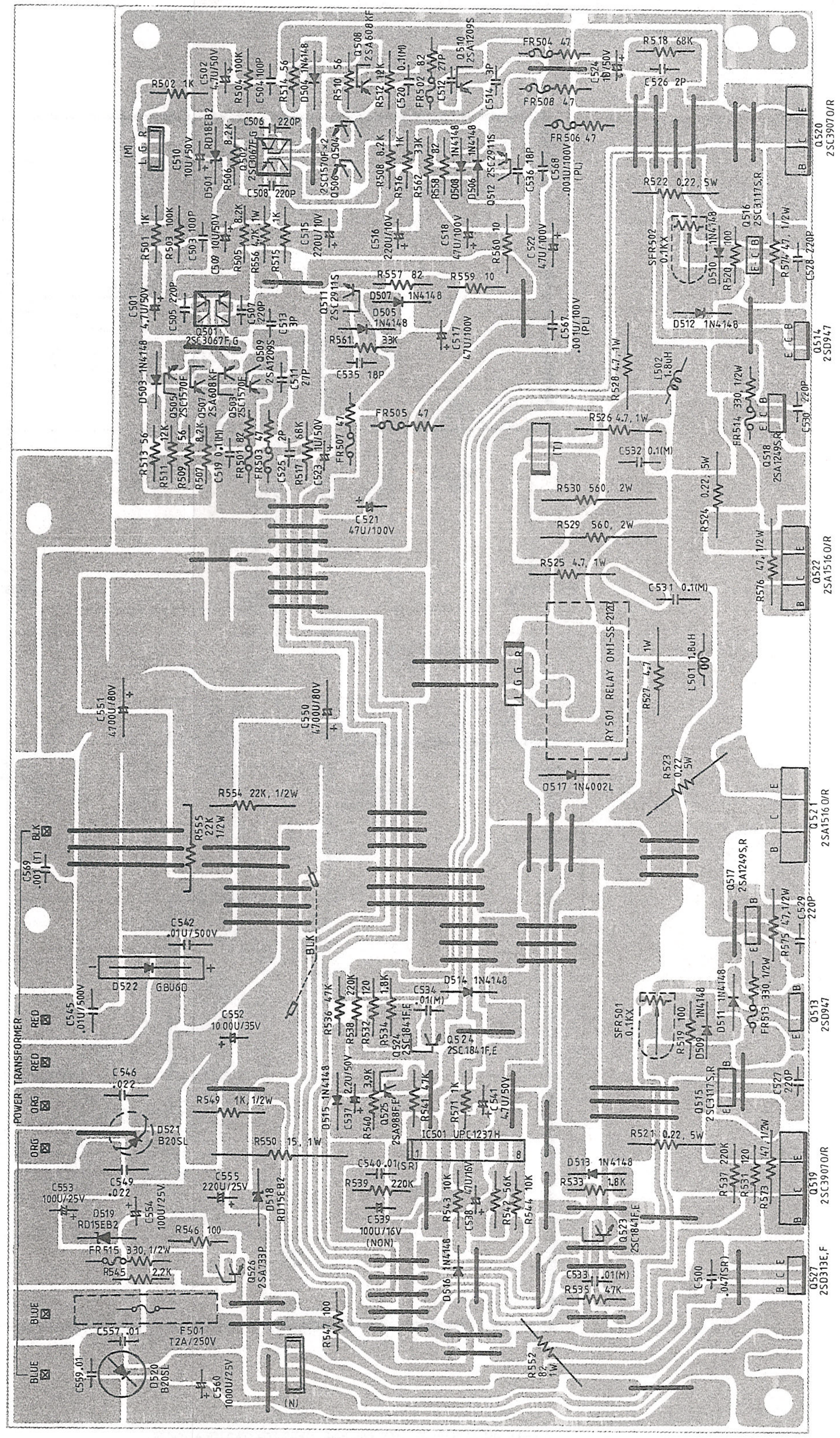
Model No. VTCF-3020

(M76) CD Decoder PCB (M75) Fuse Lamp PCB (M71) CD Control PCB


LCD01
LCD DISPLAY
CON05A
LP01
5V/150mA
IC04
PST520D
IC05
CXP10110
IC03
CXD1167Q
IC06
UPD6376GS
IC08 NJM4558L
IC01
CXA1081M
IC02
CXA1082BQ
XTL01
8.4672MHz
CON6
CON6A
CON9
CON3
CON2
CON01
D15
B20SL
4143225910
4143225930
S01
S05
S10
S09
S02
S04
S03
S08
S06
PROGRAM

NOTES: 1. (T) = MULTI - LAYER CERAMIC CAPACITOR. 2. ALL RESISTORS ARE 1/6W, UNLESS OTHERWISE NOTED.

(M77) Power Amplifier PCB


POWER TRANSFORMER
IC501 UPC1237H
RY501 RELAY DM1-SS-212L
D522 GBU8D
F501
T2A/250V
C551
4700U/80V
C550
4700U/80V
Q520 2SC3907O/R
Q522 2SA1516O/R
Q521 2SA1516O/R
Q519 2SC3907O/R
Q514 2SD947
Q513 2SD947
Q527 2SD313E,F
BLK
RED
ORG
BLUE

NOTE: ALL RESISTORS ARE 1/4W, UNLESS OTHERWISE NOTED.

Alignment & Adjustments

FM IF Alignment Procedure

Adjust : T102

1. Connect .022uF capacitor to IF sweep generator output to FM antenna.
2. Output waveform from the oscilloscope connected to C135 (-) & GND.
3. Adjust T102 for maximum output.

AM IF Alignment Procedure

Adjust : T101

1. Connect .022uF capacitor to IF sweep generator output to IC101 pin 22 & GND.
2. Output waveform the oscilloscope connected to C135 (-) & GND.
3. Adjust T101 for maximum output.

FM Range & Sensitivity Adjustment

Range :

1. FM RF signal generator input through antenna output from speaker.
2. Digital DV voltage meter connected to TP13 & TP14.
3. Tuning to 87.5MHz, check the reading as 1.6V ±0.1V.
4. Tuning to 108MHz, check the reading as 7.5V - 8V.
5. Repeat adjustments as necessary to minimize tracking error.

Sensitivity

1. Tuning to 90MHz, turn VR to 2/3 position check for maximum output.
2. Tuning to 106MHz, turn VR to 2/3 position check for maximum output.

AM Range & Sensitivity Adjustment

Range :

1. AM RF signal generator O/P from loop antenna, and received by AM loop antenna.
2. Digital DC voltage meter connected to TP13 & TP14.
3. Tuning to 531kHz, adjust L105 and let counter reading as 1.2V ±0.05V.
4. Tuning to 1602kHz, adjust TC102 and let counter reading as 7.5V ±0.05V.
5. Repeat adjustments as necessary to minimize tracking error.

Sensitivity

1. Tuning to 603kHz, turn VR to 2/3 position and adjust L102 for maximum output.
2. Tuning to 1404kHz, turn VR to 2/3 position and adjust TC101 for maximum output.
3. Repeat adjustments as necessary to minimize tracking error.

FM 76kHz Alignment

1. Connect FM signal generator to FM EXT. antenna terminal.
2. Tuning to 98.1MHz.
3. Connect frequency counter as figure 3.
4. Set FM mode key to FM stereo.
5. Adjust SFR101 let counter reading as 76kHz ±200Hz.

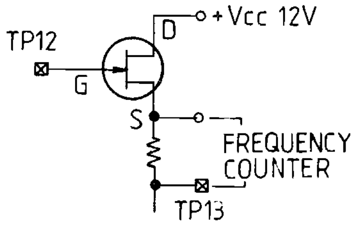


Figure 3

Cassette Deck Head Azimuth Adjustment

1. Insert test tape MTT-257E into deck A, in play mode.
2. VTVM connect to speaker terminals.
3. Adjust the left side screw for the maximum output.
4. Insert test tape MTT-257E into deck B, in play mode.
5. Adjust the left side screw for the maximum output.

Cassette Speed Adjustment

1. Insert test tape MTT-111 into deck B (Play deck), in normal dubbing mode.
2. Digital counter connected to speaker terminals.
3. Adjust SFR602, and let counter reading as 2940Hz - 3060Hz.
4. Insert test tape MTT-5521 into deck A (R/P deck), in Hi-speed dubbing mode.
5. Digital counter connected to speaker terminals.
6. Adjust SFR601, and let counter reading as 5300Hz - 5500Hz.

Oscillator Frequency Adjustment

1. Insert test tape MTT-5521 into deck A (R/P deck).
2. In record mode.
3. Digital counter connected to TP8 & TP9 (GND).
4. Adjust L601, let counter reading as 80kHz ±0.5kHz

Oscillator Trap Adjustment

1. VTVM connected to TP5 (L) & TP6 (R).
2. In record mode.
3. Adjust L303 (L) & L304 (R).
4. Let the output from VTVM to minimum.

Bias Current Adjustment

1. VTVM connected to TP1 & TP2 (GND).
2. In record mode. (AC-512 test tape to deck A)
3. Adjust SFR301, let the output from VTVM as 5.9mV (L).
4. VTVM connected to TP3 & TP4 (GND).
5. Adjust SFR302, let the output from VTVM as 5.9mV (R).
6. VTVM connection as step 1.
7. In record mode. (MTT-5521 to deck A)
8. Check the output as 3.4mV ±0.1mV (L).
9. VTVM connection as step 4.
10. Check the output as 3.4mV ±0.1mV (R).

Idle Current Adjustment

1. Power switch on, volume control to minimum.
2. Warm up at least 30 seconds.
3. DC meter across R521.
4. Adjust SFR501 (L), let DC=5mV.
5. DC meter across R522.
6. Adjust SFR502 (R), let DC=5mV.

Adjustment Locations

MAIN PCB

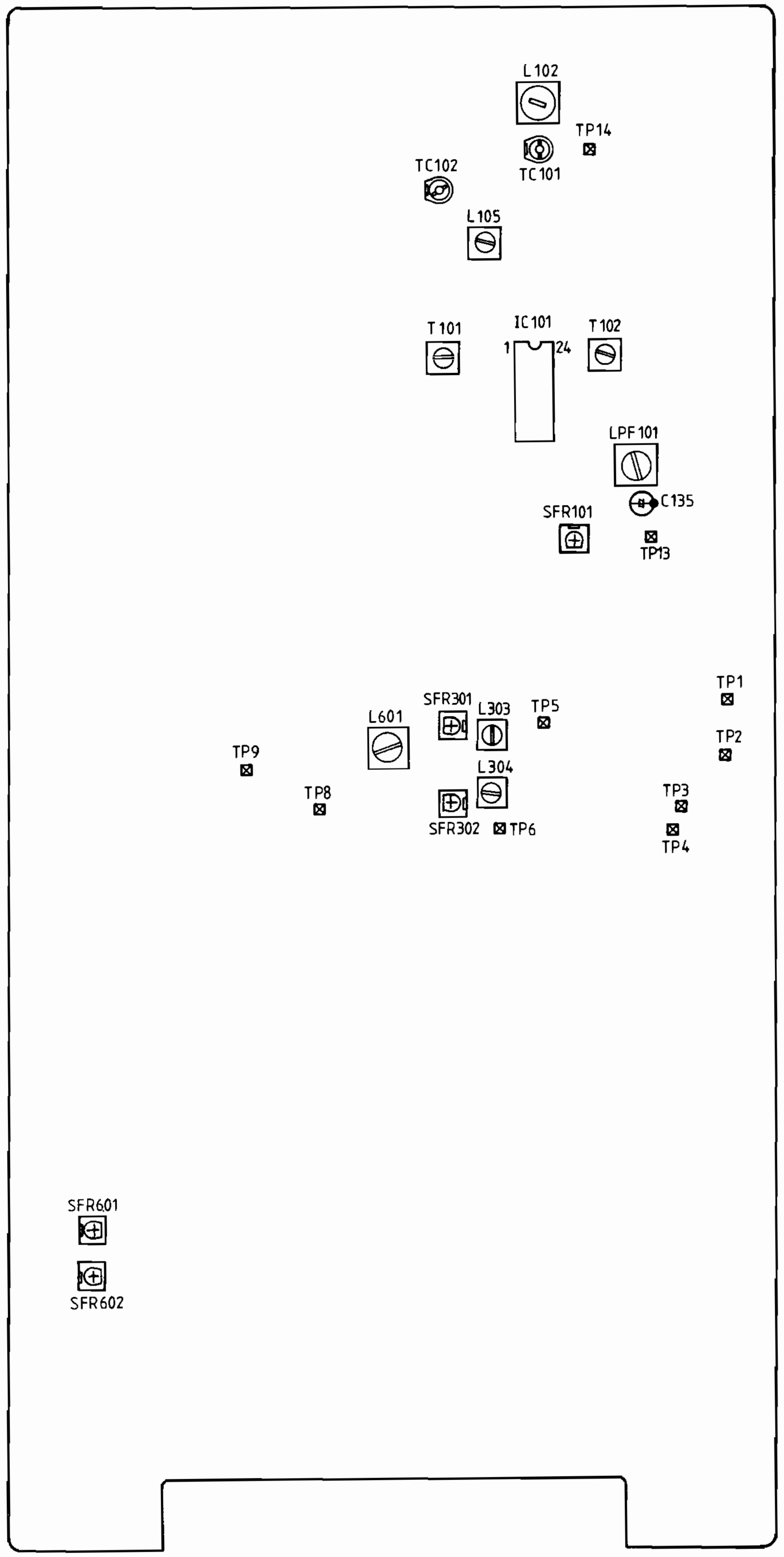

L102
TP14
TC102
TC101
L105
T101
IC101
1
24
T102
LPF101
C135
SFR101
TP13
TP1
SFR301
L303
TP5
L601
TP2
TP9
L304
TP3
TP8
SFR302
TP6
TP4
SFR601
SFR602

Figure 5

CD Adjustment

Vco Adjust

1. CD disc. into CD player, in stop mode.
2. Frequency counter connected to TP6 & TP2.
3. TP5 & TP2 short.
4. Adjust VR05, let counter reading as 4.2336 - 4.2337 MHz.

Focus Offset Adjust

1. CD disc. (Philips 5A) into CD player, in play mode.
2. Scope connected to TP1 & TP2.
3. Adjust VR02, let the wave form to maximum.

EF Balance Adjust

1. CD disc. (Philips 5A) into CD plaaayer, in play mode.
2. Scope connected to TP4 & GND.
3. TP3 & TP2 short.
4. Adjust VR01 for a symmetrical wave form Figure 4.

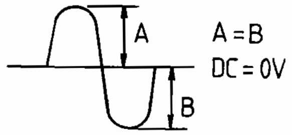
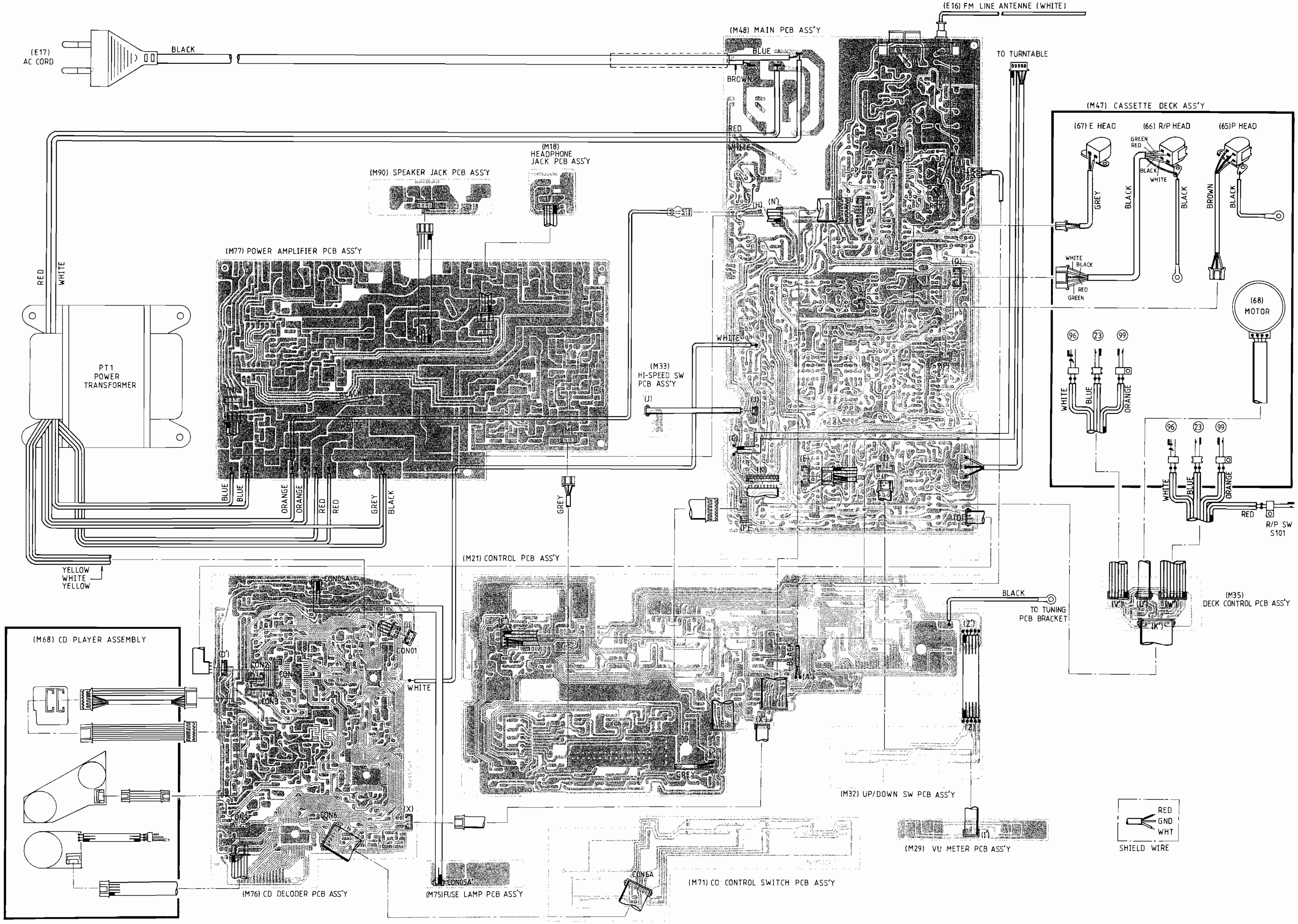


Figure 4

Wiring Diagram-Component Side

Model No. VTCF-3020


(E16) FM LINE ANTENNE (WHITE)
(M48) MAIN PCB ASS'Y
(E17)
AC CORD
BLACK
BLUE
BROWN
RED
WHITE
TO TURNTABLE
(M47) CASSETTE DECK ASS'Y
(67) E HEAD
(66) R/P HEAD
(65)P HEAD
GREEN
RED
BLACK
WHITE
GREY
BLACK
BLACK
BROWN
BLACK
WHITE
BLACK
RED
GREEN
(68)
MOTOR
96
23
99
WHITE
BLUE
ORANGE
96
23
99
WHITE
BLUE
ORANGE
RED
R/P SW
S101
(M18)
HEADPHONE
JACK PCB ASS'Y
(M90) SPEAKER JACK PCB ASS'Y
(M77) POWER AMPLIFIER PCB ASS'Y
(H)
(N')
(Q)
(P)
RED
WHITE
PT1
POWER
TRANSFORMER
WHITE
(M33)
HI-SPEED SW
PCB ASS'Y
(J)
(J)
(G)
(K)
(F)
(E)
(O)
BLACK
BLUE
BLUE
ORANGE
ORANGE
RED
RED
GREY
BLACK
GREY
YELLOW
WHITE
YELLOW
(M21) CONTROL PCB ASS'Y
(M35)
DECK CONTROL PCB ASS'Y
(V)
(U)
(W)
(K')
BLACK
TO TUNING
PCB BRACKET
(Z')
(Z)
(Y)
(A')
BLACK
(X')
GREY
(M68) CD PLAYER ASSEMBLY
CON05A
CON01
(D')
CON2
CON1
CON3
WHITE
(X)
CON5
CON6
(M76) CD DECODER PCB ASS'Y
CON05A
(M75)FUSE LAMP PCB ASS'Y
CON6A
(M71) CD CONTROL SWITCH PCB ASS'Y
(M32) UP/DOWN SW PCB ASS'Y
(M29) VU METER PCB ASS'Y
RED
GND
WHT
SHIELD WIRE

Adjustment Locations

Model No. VTCF-3020

CD DECODER PCB

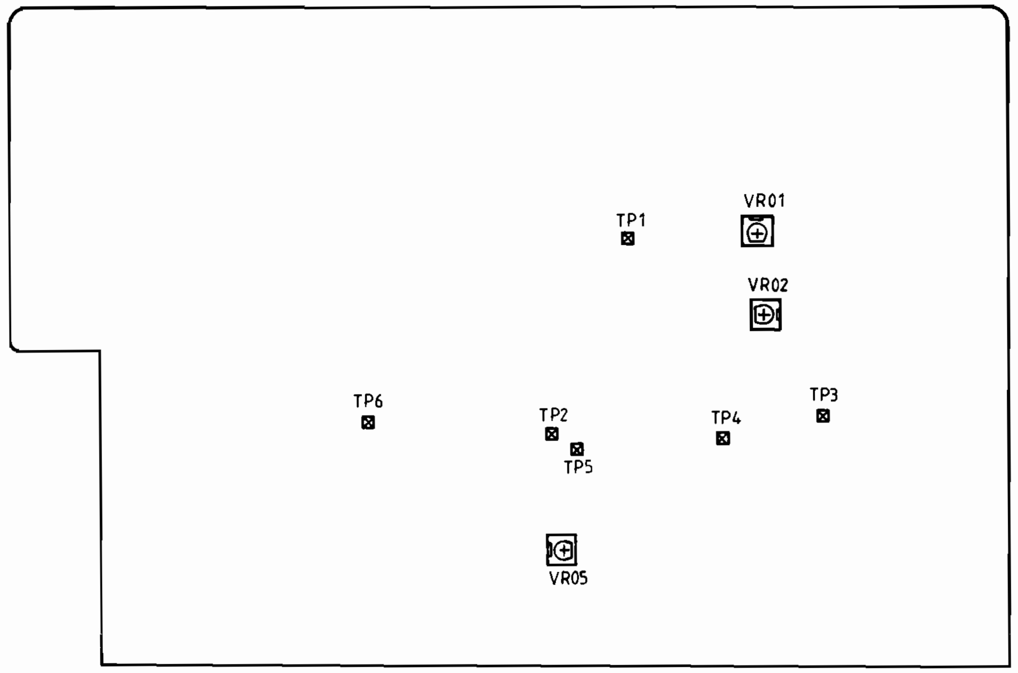

TP1
VR01
VR02
TP6
TP2
TP5
TP4
TP3
VR05

Figure 6

POWER AMPLIFIER PCB

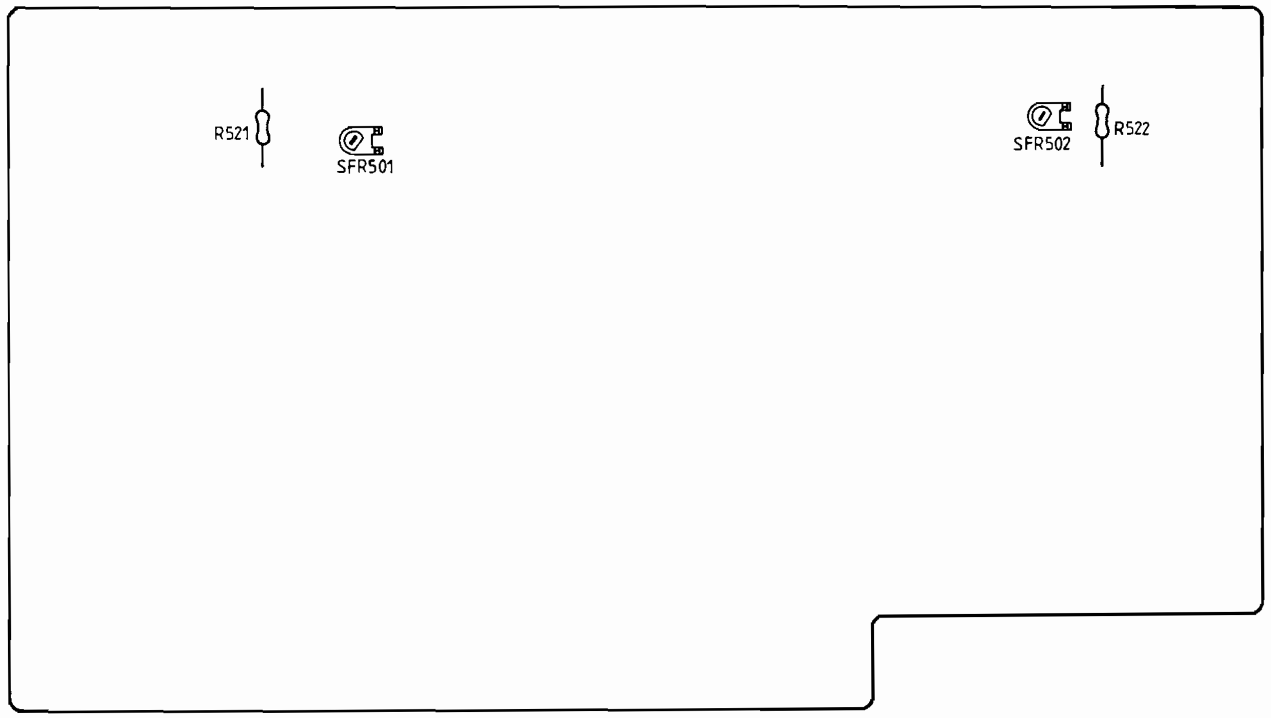
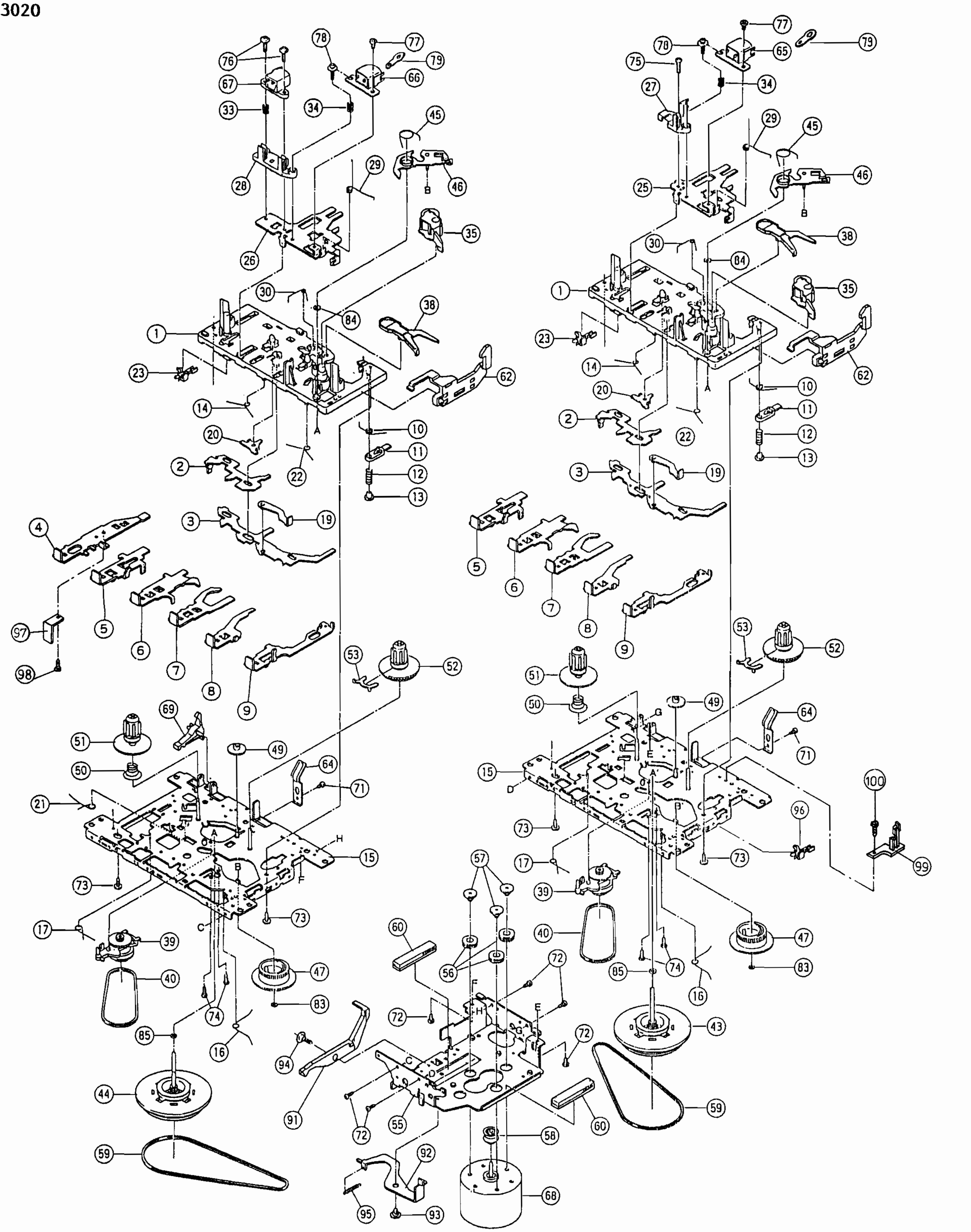

R521
SFR501
SFR502
R522

Figure 7

Cassette Deck Exploded View

Type No. TN-21ZSW-134 Part No. 4380603940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74
75
76
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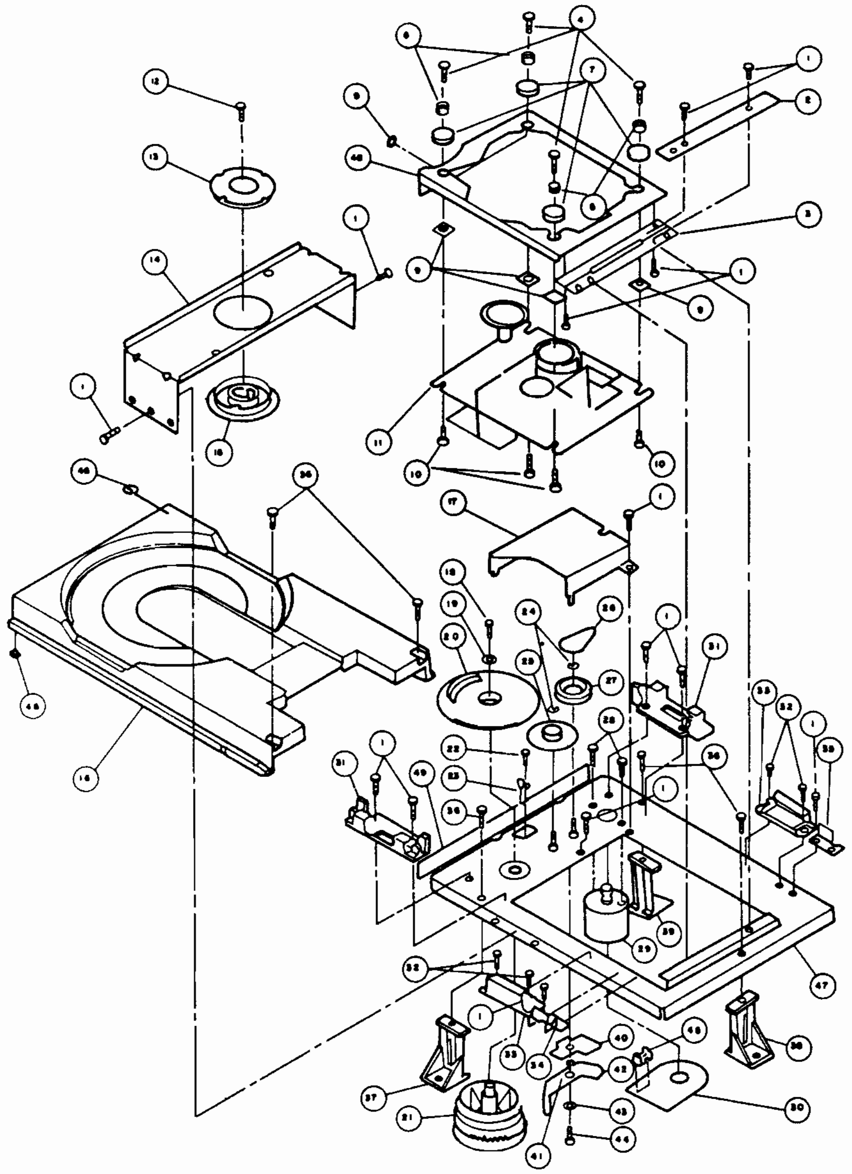
93
94
95
96
97
98
99
100
A
B
C
D
E
F
G
H

EXPLODED VIEW/PARTS LIST

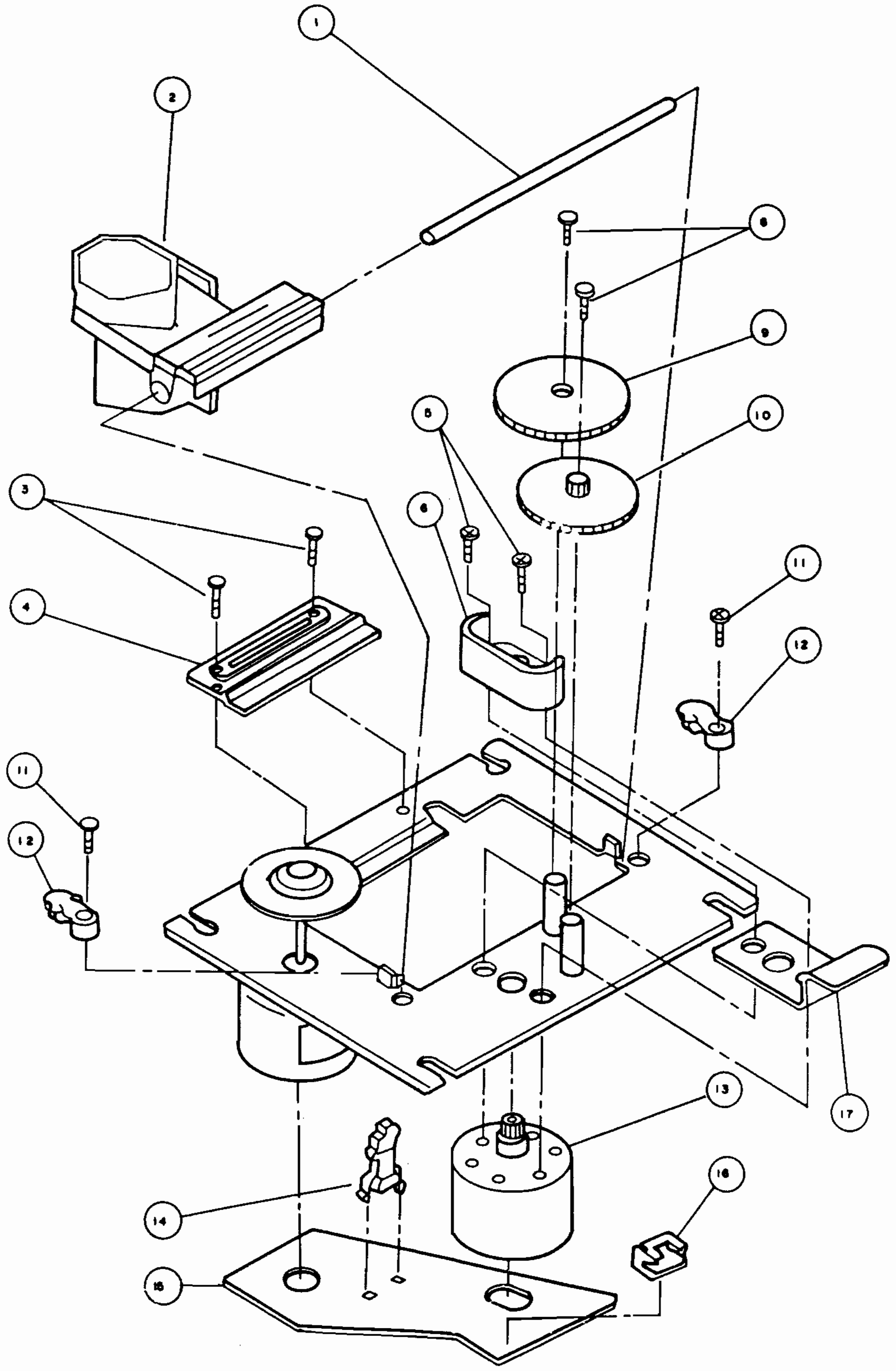
●CDP MECHANISM



4
6
1
12
7
9
2
13
48
8
3
1
14
9
1
9
1
15
11
10
10
46
36
17
1
18
19
24
26
20
25
27
1
31
45
16
28
33
32
1
39
22
1
31
49
23
36
1
29
39
47
32
1
40
45
38
33
34
42
37
21
43
30
41
44

EXPLODED VIEW/PARTS LIST

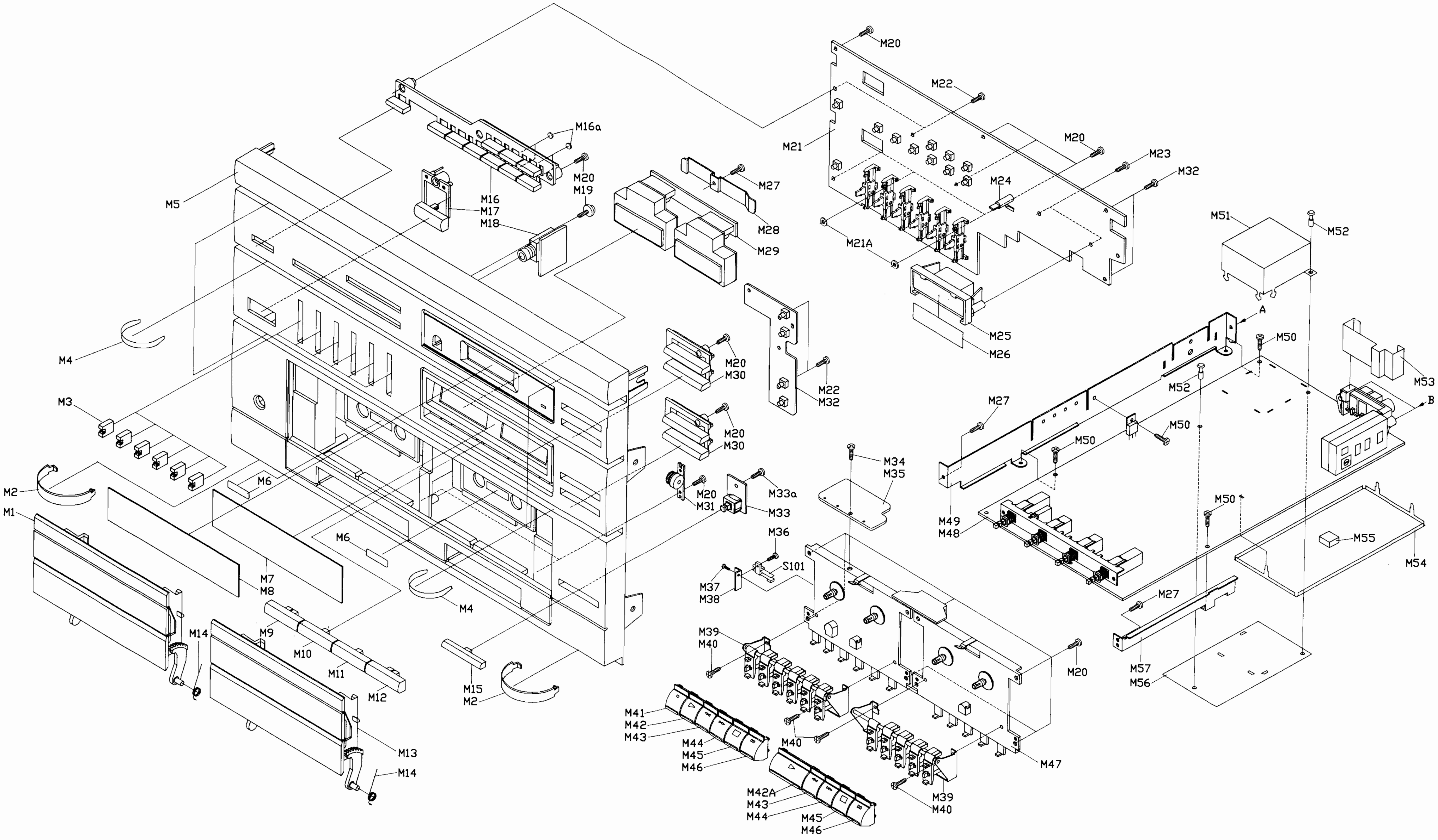
●OPTICAL PICK-UP CARRIAGE



1
2
8
9
10
5
6
3
4
11
12
11
12
13
17
14
16
15

Mechanical Exploded View (A)

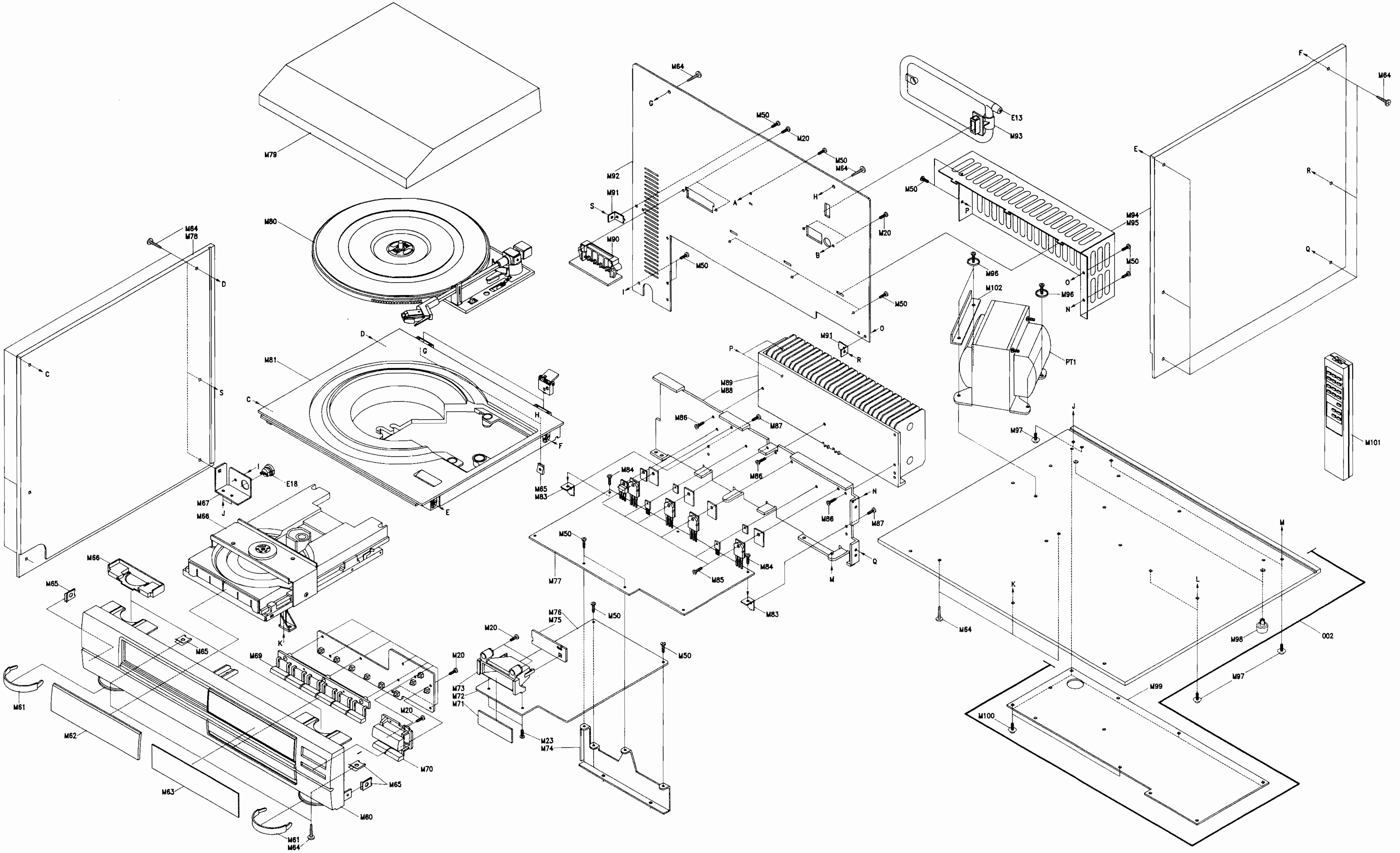
Model No. VTCF-3020



M20
M22
M21
M20
M23
M32
M24
M21A
M16a
M16
M17
M18
M20
M19
M27
M28
M29
M5
M51
M52
A
M50
M25
M26
M53
B
M4
M20
M30
M22
M32
M52
M27
M3
M20
M30
M50
M50
M6
M2
M1
M20
M31
M33a
M33
M34
M35
M49
M48
M50
M55
M54
M36
S101
M37
M38
M7
M8
M6
M4
M27
M9
M10
M11
M12
M14
M39
M40
M15
M2
M20
M57
M56
M41
M42
M43
M44
M45
M46
M40
M13
M14
M47
M42A
M43
M44
M45
M46
M39
M40

Mechanical Exploded View (B)

Model No. VTCF-3020


M79
M80
M81
M64
M78
D
C
S
G
H
F
E
I
E18
M67
J
M66
K
M65
M83
M65
M61
M62
M63
M60
M61
M64
M69
M20
M70
M73
M72
M71
M20
M76
M75
M50
M23
M74
M50
M77
M64
M50
M92
M91
M90
M20
M50
M64
A
H
B
M20
M50
O
M91
R
P
M89
M88
M86
M87
M84
M86
M86
M87
N
Q
M
M85
M84
M83
E13
M93
M50
M94
M95
M50
M96
M102
M96
PT1
N
O
F
M64
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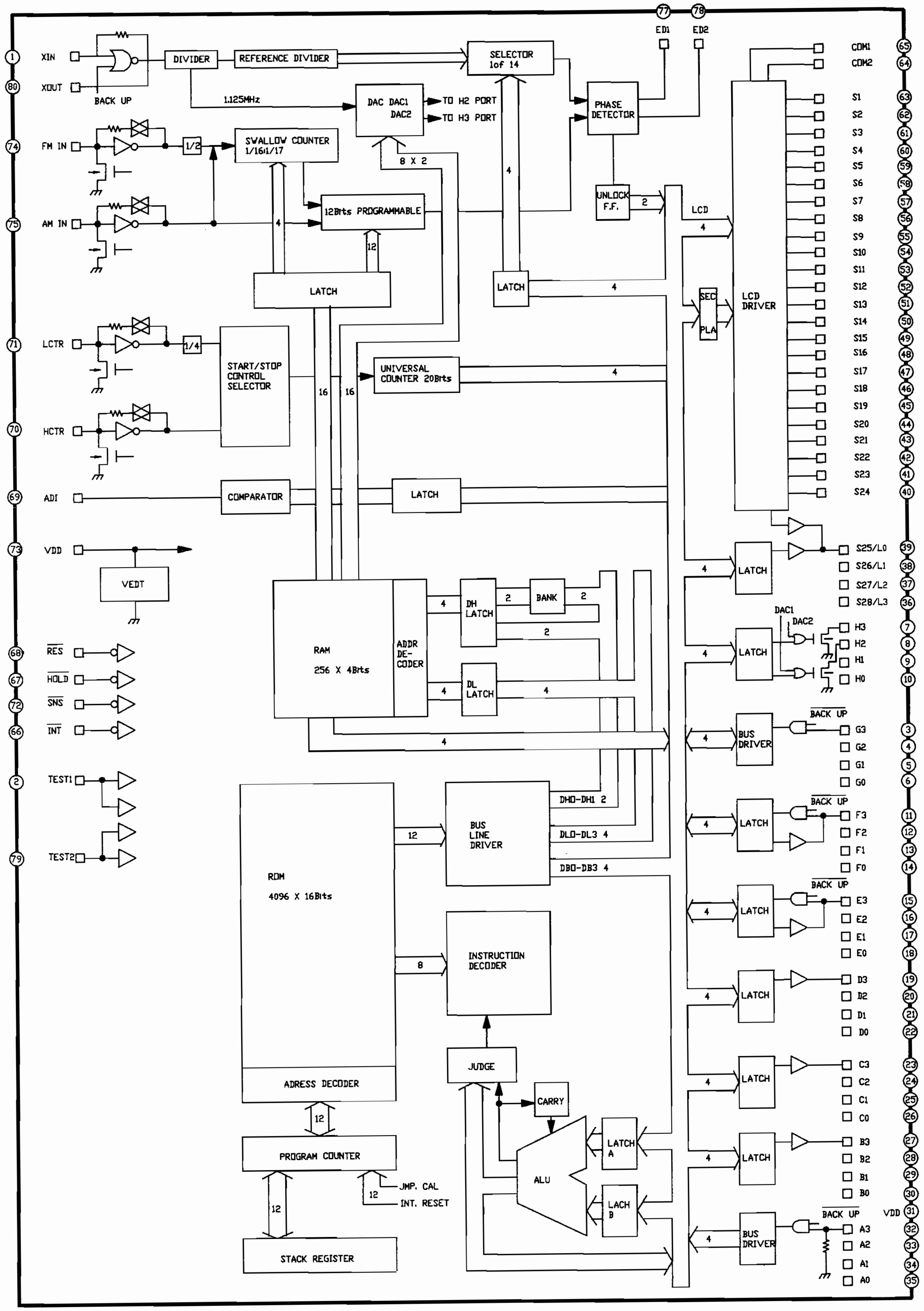
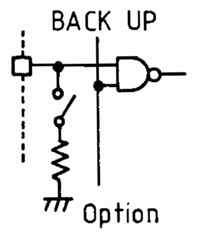
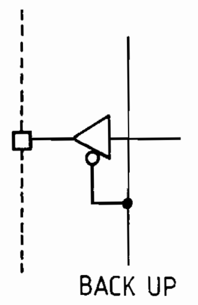
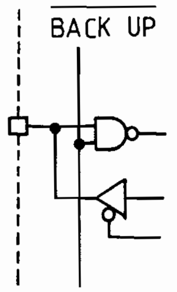
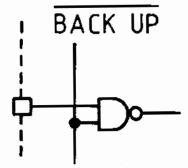
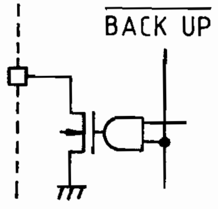
R
Q
M101
M97
J
M
K
L
M64
M98
002
M97
M99
M100

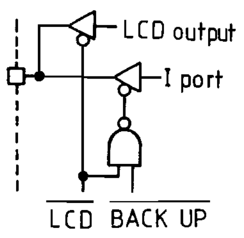
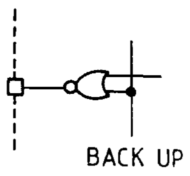
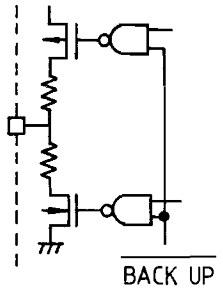
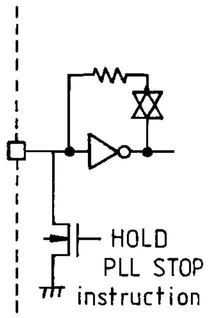
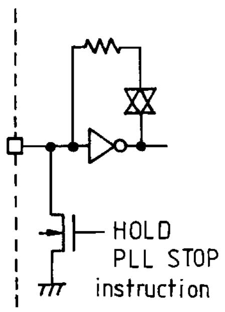
IC001 BLOCK DIAGRAM

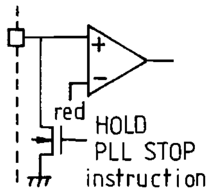
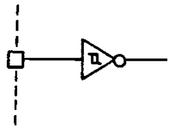
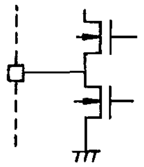
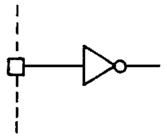
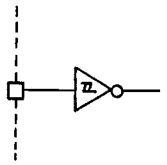
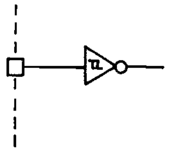
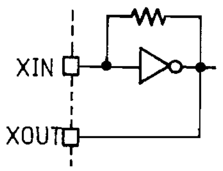

XIN
XOUT
BACK UP
FM IN
AM IN
LCTR
HCTR
ADI
VDD
VEDT
RES
HOLD
SNS
INT
TEST1
TEST2
DIVIDER
REFERENCE DIVIDER
SELECTOR 1of 14
1.125MHz
DAC DAC1
DAC2
TO H2 PORT
TO H3 PORT
8 X 2
PHASE DETECTOR
UNLOCK F.F.
ED1
ED2
1/2
SWALLOW COUNTER 1/16・1/17
12Bits PROGRAMMABLE
LATCH
1/4
START/STOP CONTROL SELECTOR
UNIVERSAL COUNTER 20Bits
COMPARATOR
RAM 256 X 4Bits
ADDR DE-CODER
DH LATCH
BANK
DL LATCH
ROM 4096 X 16Bits
ADRESS DECODER
BUS LINE DRIVER
DH0-DH1 2
DL0-DL3 4
DB0-DB3 4
INSTRUCTION DECODER
JUDGE
CARRY
ALU
LATCH A
LACH B
PROGRAM COUNTER
JMP. CAL
INT. RESET
STACK REGISTER
LCD
SEG PLA
LCD DRIVER
BUS DRIVER
COM1
COM2
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
S24
S25/L0
S26/L1
S27/L2
S28/L3
H3
H2
H1
H0
G3
G2
G1
G0
F3
F2
F1
F0
E3
E2
E1
E0
D3
D2
D1
D0
C3
C2
C1
C0
B3
B2
B1
B0
A3
A2
A1
A0

FUNCTIONAL EXPLANATION OF SYNTHESIZER IC001 TERMINALS

Model No. VTCF-3020

Pin Name	Pin No.	Functional Description	I/O	I/O Circuit Type
PA_0 PA_1 PA_2 PA_3	35 34 33 32	Used exclusively for data input. Low threshold type. These port pins can be used for key data entry. Pull-down resistance can be selected by the user option. In this selection, all four port pins are controlled at one time. That is, the pull-down resistor cannot be selected for each port pin individually. Input to the port pins is inhibited during the BACKUP mode ON.	Input	 BACK UP Option
PB_0 PB_1 PB_2 PB_3 PC_0 PC_1 PC_2 PC_3	30 29 28 27 26 25 24 23	Used exclusively for data output. Can be used for key scan timing signal output because these ports are composed of CMOS transistors with unbalanced impedance. Enter into output high impedance state at the BACKUP mode. Placed in "L" level state at the reset ($\overline{RES}$ = "L").	Output	
PD_0 PD_1 PD_2 PD_3	22 21 20 19	Used exclusively for data output. Normally CMOS output type. Enter into output high impedance state at the BACKUP mode. Placed in the "L" level state at the reset ($\overline{RES}$ = "L").		
PE_0 PE_1 PE_2 PE_3	18 17 16 15	Used for data input and output. The port is set to the input mode once the input instruction (IN, TPT, or TPF) is executed in the application program while set to the output mode if the output instruction (OUT, SPB, RPB) is used. The operation mode, once selected by such an instruction, can be effective until an instruction of different type is used in application program. Set to the input mode at the reset ($\overline{RES}$ = "L"). Set to the input mode at the BACKUP mode. In this case, note that data input to this port is inhibited.	Input/ Output	
PF_0 PF_1 PF_2 PF_3	14 13 12 11	Used for data input and output. This port is controlled by the FPC instruction. Each port pin can be set to the input mode or the output mode by that instruction. Set to the input mode at the reset ($\overline{RES}$ = "L"). This port is set to the input mode at the BACKUP mode. In this case, note that data input to this port is inhibited.		
PG_0 PG_1 PG_2 PG_3	6 5 4 3	Used exclusively for data input Data input to the port is inhibited at the BACKUP mode.	Input	
PH_0 PH_1 PH_2 PH_3	10 9 8 7	Used exclusively for data output. This port can be used for frequency band power source selection because this port has Nch open drain output circuitry at a high withstand voltage level. Port pins H_2 and H_3 can be also used as the DAC_1 and DAC_2 outputs, respectively. Enter into high impedance state at the reset ($\overline{RES}$ = "L") and the BACKUP mode.	Output	

Pin Name	Pin No.	Functional Description	I/O	I/O Circuit Type
PI_0/S25 PI_1/S26 PI_2/S27 PI_3/S28	39 38 37 36	Used exclusively for data output. This port has CMOS type output circuitry and can be selected as LCD driver output ports. The port operation mode can be selected by the SS or RS instruction. The output mode cannot be selected by such an instruction in bit units. This port is set to the LCD driver output mode at the reset ($\overline{RES}$ = "L") and at the power supply. In this case, the segment display is forced into the OFF state. This port is fixed to the "L" level at the BACKUP mode.	Output	 LCD output I port $\overline{LCD}$ $\overline{BACK\ UP}$
S1 to S24	63 to 40	Used for driving segments. That is, these ports are used as the LCD output drivers. The frame frequency for segment output is 100 Hz. The lighting format is 1/2 duty and 1/2 bias. The segment display is forced into the OFF state at the reset ($\overline{RES}$ = "L") and power supply. This port is set to the "L" level at the BACKUP mode.	Output	
COM 1 COM 2	65 64	Used for LCD drive common signal output. The lighting format is 1/2 duty and 1/2 bias. Normal output at the reset ($\overline{RES}$ = "L") and power supply. These ports are set to the "L" level at the BACKUP mode.	Output	
FM IN	74	Used for FM VCO input (local oscillation). Note that the VCO means Voltage-Controlled Oscillation. Input through capacitor coupling is required. The input frequency range is between 10 MHz and 130 MHz.	Input	
AM IN	75	Used for AM VCO input (local oscillation). Note that the VCO means Voltage-Controlled Oscillation. Input through capacitor coupling is required. Frequency bands can be selected by CW1 of the PLL instruction. Hi (2 to 40 MHz) → SW Lo (0.5 to 10 MHz) → LW, AM		
HCTR	70	Used for universal counter input. Input through capacitor coupling is required. The input frequency range is between 0.4 MHz and 12 MHz. This port can be used for counting FM IF and AM IF.	Input	
LCTR	71	Used for universal counter input. Input through capacitor coupling is required when the input frequency range is between 100 kHz and 500 kHz. Input through capacitor coupling is not required when the input frequency range is between 1 Hz and 20 kHz. This port can be used for counting AM IF.		

Pin Name	Pin No.	Functional Description	I/O	I/O Circuit Type
ADI	69	Used for AD converter input. The AD converter is composed of a 6-bit sequential comparator requiring a conversion time of 1.28 milliseconds. Full-scale data (3FH): VDD x 63/96.	Input	
INT	66	Used for interrupt request signal input. Interrupt request becomes active if falling signal edge is detected at the port with the INTEN flag already set. Note that this flag is set by the SS instruction..	Input	
EO_1 EO_2	77 78	Used for phase comparison error output. Note that the reference signal frequency and programmable divider output signal frequency are compared in their phase On-chip charge pump available. The EO_1 and the EO_2 have the same circuit type.	Output	
SNS	72	Used at the BACKUP mode for power failure signal input. This port can be used as a normal input port.	Input	
HOLD	67	Used for HOLD mode request signal input. The HOLD mode becomes active if the HOLD pin logic changes to "L" with the HOLDEN flag already ON. Note that this flag is set by the SS instruction. The withstand voltage level of this port is "high" in order that the port can be used together with a power switch.	Input	
RES	68	Used for the system reset request input. The power up "L" level reset request signal must be applied to this port for more than 75 milliseconds. The reset "L" level start request signal must be applied to this port for more than five fundamental clock cycles.	Input	
XIN XOUT	1 80	These two pins are used for X'tal oscillation frequency (4.5 MHz) input and output. On-Chip feedback resistor available.	Input/ output	
TEST 1 TEST 2	2 79	These two pins are used for LST test signal input. They should be open-circuited or connected with the VSS pin.		
VDD VSS	31,73 76	Power source.		

ZEILE	POSITION	SYM BEZEICHNUNG	ET-NUMMER
1			
2		LAUTSPRECHERBOX :	
3			
4		GEHAEUSE Q 1200	781 746 3
5		ABDECKWAND Q 1200	781 744 8
6		HOLZDUEBEL FUER ABDECKWAND 4 ST.	781 736 4
7		BLENDE FUER MT OHNE KREUZ	781 716 6
8		BLENDE FUER HT OHNE KREUZ	781 742 2
9		TIEFTOENER CSW 20E 6052-N	781 740 6
10		MITTELTOENER MTQ 93-60F1-SC	781 741 4
11		HOCHTOENER CT 106 FS 585 SI	743 715 5
12		FREQENZWEICHE Q 1200	781 745 5
13			
14		GEHAEUSE U. BEDIENTEILE :	
15			
16		FERNBEDIENUNG	781 710 9
17	E13	AM-RAMENANTENNE	781 708 3
18		FM-WURFANTENNE 75 OHM-ANSCHLUSS	965 604 2
19	M1	CASSETTENFACH "A" LINKS	781 636 6
20	M2	ZIERSTREIFEN F. FUSS,RDF	781 665 5
21	M3	KNOPF,SCHIEBEREGLER	781 643 2
22	M4	ZIERSTREIFEN F. FUSS,RDF	781 664 8
23	M5	FRONTBLENDE,RDF	781 662 2
24	M7	FRONTSCHEIBE,INSTRUMENT	781 656 4
25	M8	FRONTSCHEIBE,TUNER	781 663 0
26	M9	KNOPF,TUNER	781 650 7
27	M10	KNOPF,TAPE	781 646 5
28	M11	KNOPF,PHONO	781 648 1
29	M12	KNOPF,CD	781 659 8
30	M13	CASSETTENFACH "B" RECHTS	781 637 4
31	M14	FEDER FUER AUSWURF	781 672 1
32	M15	KNOPF,HI-SPEED	781 653 1
33	M16	KNOPF,PREST	781 639 0
34	M17	KNOPF,POWER	781 651 5
35	M24	LEDHALTER	782 125 9
36	M25	DISPLAYKASTEN,RDF	782 126 7
37	M26,72	FILTERSCHEIBE,DISPLAY	782 127 5
38	M29	INSTRUMENTKASTEN	782 128 3
39	M30	KNOPF,UP-DOWN	781 641 6
40	M31	DAEMPFER	781 431 2
41	M39	KNOPF-ADAPTER TB	781 440 3
42	M41	KNOPF,RECORD	781 645 7
43	M42	KNOPF,PLAY-SCHAL	781 647 3
44	M42A	KNOPF,PLAY-BREIT	781 649 9
45	M43	KNOPF,REW	781 652 3
46	M44	KNOPF,FF	781 654 9
47	M45	KNOPF,STOP-EJECT	781 655 6
48	M46	KNOPF,PAUSE	781 657 2
49	M47	CASSETTENLAUFWERK	781 439 5
50	M52	PLASTIKSTOPPEN 3X4.5	733 209 1
51	M60	FRONTBLENDE,CD	781 635 8
52	M61	ZIERSTREIFEN F. FUSS,CD	781 667 1
53	M62	FRONTBLENDE,CD-SCHLITTEN	781 642 4
54	M63	FRONTSCHEIBE,DISPLAY CD	781 644 0
55	M66	FUSSHALTER	782 129 1
56	M68	CD-MECHANIK	781 674 7
57	M69	KNOPF,CD 6-FACH	781 640 8
58	M70	KNOPF,PLAY-PAUSE	781 658 0
59	M73	DISPLAYKASTEN,CD	782 130 9
60	M76	CD-PLATINE	781 684 6
61	M78	SEITENTEIL,LINKS	781 669 7
62	M79	ABDECKHAUBE	781 670 5
63	M80	PLATTENSPIELER	781 673 9
64	M81	OBERTEIL	781 660 6
65	M82	SCHARNIER	781 671 3
66	M90	LAUTSPRECHERANSCHLUSSBUCHSE	781 705 9
67	M91	RUECKWAND	781 666 3
68	M93	ANTENNENHALTER	781 661 4
69	M94	SEITENTEIL,RECHTS	781 668 9
70	M98	FUSS,HINTEN	781 449 4
71			
72		CD-MECHANIK :	
73			
74		CD-MECHANIK	781 674 7
75	16	CD-SCHLITTEN	747 177 4
76	21	KURVENRAD	747 178 2
77	23	MIKROSCHALTER	747 179 0
78	26	RIEMEN	747 180 8
79	29	MOTOR,RF-510T	740 020 3

ZEILE	POSITION	SYM BEZEICHNUNG	ET-NUMMER
80			
81		PICK-UP CHASSIS :	
82			
83	2	LASERABTASTEINHEIT KSS-210A	780 239 0
84	9	ZAHNRAD-LASER	747 181 6
85	10	ZAHNRAD-MOTOR	747 182 4
86	13,1 LASER	MOTOR,X-2641-337	747 183 2
87	13,2 DISC	MOTOR,X-2641-348	747 184 0
88			
89		CASSETTENLAUFWERK :	
90			
91		CASSETTENLAUFWERK	781 439 5
92	2	SCHALTHEBEL	742 618 2
93	3	SCHALTSCHIENE	742 619 0
94	4	TASTENSCHIEBER,REC.	742 620 8
95	5	TASTENSCHIEBER,PLAY	742 621 6
96	6	TASTENSCHIEBER,REW.	742 622 4
97	7	TASTENSCHIEBER,F.F.	742 623 2
98	10	PROFILFEDER	742 626 5
99	11	PAUSERASTHEBEL	745 120 6
100	12	DRUCKFEDER,PAUSERAST	742 628 1
101	13	STOPFEN,PAUSERAST	742 629 9
102	14	PROFILFEDER	742 630 7
103	16	PROFILFEDER	742 631 5
104	17	PROFILFEDER	742 632 3
105	22	PROFILFEDER	742 636 4
106	23	BLATTFEDERSCHALTER	745 291 5
107	29	PROFILFEDER	742 638 0
108	30	PROFILFEDER	742 639 8
109	34	FEDER	999 548 1
110	35	GA-ROLLE	742 641 4
111	38	FUEHLHEBEL	742 642 2
112	39	RUTSCHKUPPLUNG KPL.	743 009 3
113	40	RIEMEN 0,9 X 35MM	998 345 3
114	43	SCHWUNGRAD 2	742 645 5
115	44	SCHWUNGRAD 1	742 644 8
116	45	PROFILFEDER	742 646 3
117	47	ZAHNRAD	742 648 9
118	49	ZAHNRAD,F.F.	742 649 7
119	50	FEDER	999 560 6
120	51	ABWICKELTELLER	742 650 5
121	52	AUFWICKELTELLER	742 651 3
122	53	SCHALTFUEHLER	742 652 1
123	58	PULLEY 2 8,5 8,5 10,0(PLASTIK)	742 768 5
124	59	RIEMEN	742 684 4
125	60	BUERSTE FUER RIEMEN	742 371 8
126	62	AUSWURFHEBEL	743 463 2
127	64	FEDER	999 564 8
128	65	WIEDERGABEKOPF	781 489 0
129	66	A/W-KOPF	781 490 8
130	67	LOESCHKOPF	781 491 6
131	68	MOTOR,SHU-2L	745 055 4
132	69	AUFN.SPERRE	742 654 7
133	85	SICHERUNGSSCHEIBE 2 MM	987 250 8
134	96	MIKROSCHALTER	781 492 4
135	99	MIKROSCHALTER	781 493 2
136			
137		ELEKTRISCHE TEILE :	
138			
139	IR-EMPF.	IR-EMPFAENGER LTM 8834 P	781 702 6
140	C002	STUETZELKO 0.1F 5.5V	746 821 8
141	C550,551	ELKO 4700 UF/80V	781 683 8
142	CF101,102	FM-KERAMIKFILTER SFE 10.7 MS3	733 843 7
143	CF103	KERAMIK-FILTER SFZ 450 JL	781 680 4
144	D01-06	DIODE 1 SS 176	988 259 8
145	D001-012	DIODE 1 SS 176	988 259 8
146	D11,12	Z-DIODE RD 5,6 EB1	965 944 2
147	D15	GLEICHRICHTER B 20 SL	733 235 6
148	D101,102	KAP.DIODE ISV 149B AM	743 892 2
149	D103	Z-DIODE RD 5,6 EB1	965 944 2
150	D103A	LED LTL 3211 A	781 697 8
151	D104,305	DIODE 1 N 4148	175 540 4
152	D105,106	DIODE 1 SS 176	988 259 8
153	D201-204	DIODE 1 N 60	175 045 4
154	D251	Z-DIODE RD 5,6 EB1	965 944 2
155	D301-304	DIODE 1 SS 176	988 259 8
156	D401-403	DIODE 1 N 4002	921 523 7
157	D404	Z-DIODE MTZ 12C	732 615 0
158	D410,411	DIODE 1 SS 176	988 259 8
159	D501	ZENERDIODE ZY 18	928 926 5
160	D503-516	DIODE 1 N 4148	175 540 4
161	D517	DIODE 1 N 4002	921 523 7
162	D518,519	ZENERDIODE ZPD 15	176 854 8